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Guidance for the Reregistration of Pesticide Products Containing Dimethyl Tetra-Chloroterephthalate (DCPA) as the Active Ingredient

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Guidance for the Reregistration of Pesticide Products Containing DIMETHYL TETRA-CHLOROTEREPHTHALATE (DCPA) as the Active Ingredient

REPRODUCED BY
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GUIDANCE FOR THE
REREGISTRATION OF PESTICIDE PRODUCTS
CONTAINING DCPA AS THE ACTIVE INGREDIENT

DCPA
(078701)

CASE NUMBER 0270

CAS 1861-32-1

ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF PESTICIDE PROGRAMS

WASHINGTON, D.C. 20460

June, 1988

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GLOSSARY OF TERMS AND ABBREVIATIONS

ADI	Acceptable Daily Intake. Also known as the Reference Dose or RfD.
a.i.	active ingredient
ARC	Anticipated Residue Contribution
CAS	Chemical Abstracts Service
CSF	Confidential Statement of Formula
EEC	Estimated Environmental Concentration. The estimated pesticide concentration system in an environment, such as a terrestrial ecosystem.
EP	End Use Product
EPA	U.S. Environmental Protection Agency
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FFDCA	Federal Food, Drug, and Cosmetic Act
LC50	Median lethal concentration - a statistically derived concentration of a substance that can be expected to cause death in 50% of test animals. It is usually expressed as the weight of substance per weight or volume of water or feed, e.g., mg/l or ppm.
LD50	Median lethal dose - a statistically derived single dose than can be expected to cause death in 50% of the test animals, when administered by the route indicated (oral, dermal, inhalation). It is expressed as a weight of substance per unit weight of animal, e.g., mg/kg.
LEL	Lowest Effect Level
MPI	Maximum Permissible Intake
MRID	Master Record Identification (number). EPA's system of recording and tracking studies submitted to the Agency.
MP	Manufacturing Use Product
NPDES	National Pollutant Discharge Elimination System
NOEL	No Observed Effect Level
OPP	Office of Pesticide Programs

OES	Office of Endangered Species, U.S. Fish and Wildlife Service
PADI	Provisional Acceptable Daily Intake
ppm	parts per million
RfD	Reference Dose
TMRC	Theoretical Maximum Residue Contribution

I. INTRODUCTION

EPA has established the Registration Standards program in order to provide an orderly mechanism by which pesticide products containing the same active ingredient can be reviewed and standards set for compliance with FIFRA. The standards are applicable to reregistration and future applications for registration of products containing the same active ingredient. Each registrant of a product containing an active ingredient subject to this Standard who wishes to continue to sell or distribute that product must bring his product and labeling into compliance with FIFRA, as instructed by this Standard.

The Registration Standards program involves a thorough review of the scientific data base underlying a pesticide's registration. The purpose of the Agency's review is to reassess the potential hazards arising from the currently registered uses of the pesticide; to determine the need for additional data on health and environmental effects; and to determine whether the pesticide meets the "no unreasonable adverse effects" criteria of FIFRA. In its review EPA identifies:

1. Studies that are acceptable to support the data requirements for the currently registered uses of the pesticide.

2. Additional studies necessary to support continued registration. The additional studies may not have been required when the product was initially registered or may be needed to replace studies that are now considered inadequate.

3. Labeling revisions needed to ensure that the product is not misbranded and that the labeling is adequate to protect man and the environment.

The detailed scientific review, which is not contained in this document, but is available upon request[1], focuses on the pesticide active ingredient. The scientific review primarily discusses the Agency's evaluation of and conclusions from available data in its files pertaining to the pesticide active ingredient. However, during the review of these data the Agency is also looking for potential hazards that may be associated with the end use products that contain the active ingredient. The Agency will apply the provisions of this Registration Standard to end use products if necessary to protect man and the environment.

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[1] The scientific reviews may be obtained from the National Technical Information Service, Port Royal Road, Springfield, VA 22152 (Telephone No. 703-487-4650).

EPA's reassessment results in the development of a regulatory position, contained in this Registration Standard, on the pesticide and each of its registered uses. See Section IV - Regulatory Position and Rationale. Based on its regulatory position, the Agency may prescribe a variety of steps to be taken by registrants to maintain their registrations in compliance with FIFRA. These steps may include:

1. Submission of data in support of product registration;

2. Modification of product labels;

3. Modifications to the manufacturing process of the pesticide to reduce the levels of impurities or contaminants;

4. Restriction of the use of the pesticide to certified applicators or other specially trained individuals;

5. Modification of uses or formulation types; or

6. Specification of packaging limitations.

Failure to comply with these requirements may result in the issuance of a Notice of Intent to Cancel or a Notice of Intent to Suspend (in the case of failure to submit data).

In addition, in cases in which hazards to man or the environment are identified, the Agency may initiate a special review of the pesticide in accordance with 40 CFR Part 154 to examine in depth the risks and benefits of use of the pesticide. If the Agency determines that the risks of the pesticide's use outweigh the benefits of use, the Agency may propose additional regulatory actions, such as cancellation of uses of the pesticide which have been determined to cause unreasonable adverse effects on the environment.

EPA has authority under the Data Call-In (DCI) provisions of FIFRA sec. 3(c)(2)(B) to require that registrants submit data to answer our questions regarding the chemical, toxicological, and environmental characteristics and fate of a pesticide. This Registration Standard lists the data EPA believes are necessary to resolve our concerns about this pesticide. These data are listed in the Tables A, B, and C in Appendix I. Failure to comply with the DCI requirements enumerated in this Registration Standard may result in issuance by EPA of a Notice of Intent to Suspend the affected product registrations.

Registrants are reminded that FIFRA sec. 6(a)(2) requires them to submit factual information concerning possible unreasonable adverse effects of a pesticide at any time that they become aware of such information. Registrants must notify the Agency of any information, including interim or preliminary results of studies, if that information suggest possible adverse effects on man or the environment. This requirement is independent of the specific time requirements imposed by EPA for submission of completed studies called in by the Agency and continues as long as a product is registered under FIFRA.

II. CHEMICAL COVERED BY THIS STANDARD

A. Description of Chemical

The following chemical is covered by this Registration Standard:

Common name: DCPA
Chemical name: Dimethyl tetrachloroterephthalate
Chemical Family: Chlorinated Benzoic Acids
CAS Registry Number: 1861-32-1
OPP (Shaughnessy) Number: 078701
Empirical Formula: $C_{10}H_6Cl_4O_4$
Trade Names: Dacthal®
Other Names: Chlorothal, chlorothal-dimethyl
Physical Characteristics: White Crystalline Solid
  Molecular Weight: 332
  Melting Point: 156 °C
  Solubility: < 0.5 mg/L in water
    100 g/L in Acetone
    200 g/L in Benzene
    170 g/L in Toluene
    140 g/L in Xylene
  Odor: Odorless
  Vapor Pressure: 0.01 mm Hg at 40 °C
  Octanol/Water Partition Coefficient: 6.8×10^3 at 25 °C.
  Stability: Stable when stored under normal temperatures. Decomposes at 360 to 370 °C. Stable to UV radiation.

B. Use Profile

Type of Pesticide:	DCPA is a herbicide that is used to control a broad spectrum of weeds when applied preemergence to germinating weed seeds. Mechanical incorporation or incorporation by irrigation is not required to assure effectiveness under most conditions of use.
Pests Controlled:	Weeds in ornamental turf and in certain vegetable and field crops.
Mechanism of Action:	Inhibits root growth by modifying cell division.
Predominant Uses:	DCPA is used in the selective control of a broad spectrum of weed grasses (smooth and hairy crabgrass, witchgrass, green and yellow foxtail, fall panicum and others). It is also effective in the selective control of certain broadleaf weeds (carpet

weed, dodder, purslane, nodding spurge, prostrate spurge, spotted spurge and common chickweed). These weeds may be selectively controlled in ornamental turf, ornamental plants, strawberries, seeded and transplanted vegetables, in cotton and soybeans and in field beans.

Formulations: There are manufacturing use products (MPs) that contain 50, 75 and 90 percent DCPA. There are also wettable powders formulated with 25, 50, 60, 75 and 90 percent DCPA; and granular products containing 1.15 to 24.0 percent DCPA.

Methods of Application: DCPA may be applied with either ground or aerial equipment.

Registration History: DCPA was first registered under FIFRA for use on turf grasses in 1958. The first food-crop use was registered on January 8, 1962. There are presently 148 products registered under Section 3 (FIFRA), 14 products under Section 24(c) and 15 intrastate products are pending registration under FIFRA, making a total of 177 products. Six of these products are in combination with other pesticidal active ingredients.

Preliminary Quantitative Usage: Sixty-three percent (2 to 2.5 million pounds) is used on turf sod farms, golf courses, home lawns and on home gardens. Thirty-one percent (1.0 to 1.2 million pounds) is used in the culture of commercial vegetables (lettuce, cole crops, onions, sweet potatoes and others.) Six percent (about 0.2 to one million pounds) is used in the culture of field crops (primarily cotton). The total annual usage of the active ingredient DCPA is approximately 3.2 - 4.7 million pounds.

III. AGENCY ASSESSMENT

A. SUMMARY

The Agency has reviewed data submitted to support the registration of dimethyl tetrachloroterephthalate (DCPA). Numerous data gaps were identified and few definitive conclusions could be made. Based on available data, the Agency has reached the following interim conclusions which are discussed in detail in Section B, which follows:

1. DCPA and its metabolites appear to have low acute and chronic toxicity based on the limited studies that have been submitted to support the presently registered pesticide products. However these products contain 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) and hexachlorobenzene (HCB) as impurities from the manufacturing of technical DCPA. These impurities have chronic toxicological properties (oncogenic, teratogenic, fetotoxic, mutagenic and adverse affects on immune response in mammals) that are of particular concern in the reregistration of DCPA based pesticide products. The manufacturer of technical DCPA has presented to the EPA information which indicated that technical DCPA contains no greater than 0.1 part per billion (ppb) 2,3,7,8-TCDD and no greater than 0.3 percent HCB. The Agency accepts this information until it is confirmed by analysis. The Agency conducted a preliminary risk assessment based on the assumption that exposure to the impurities will be proportional to the exposure to DCPA. The estimates of risk obtained in this risk assessment were low; however, the uncertainities were high. Therefore, the Agency is requiring additional data to reduce the uncertainities regarding exposure to the impurities. When these data are received and reviewed, the risk will be reevaluated.

2. Forty-five established tolerances for residues of DCPA in raw agricultural commodities (40 CFR 180.185) are inadequately supported by both residue chemistry and toxicology data. Additional data in these areas are required.

3. The Agency's review identified missing data necessary to evaluate the potential hazard to the environment and to human health associated with the continued use of DCPA as an active ingredient in pesticide products. The missing data are listed as data gaps in the tables of Appendix I of this document, and must be submitted in order to continue existing registration of pesticide products containing DCPA and in order to register new pesticide products that contain DCPA.

4. The Agency has also determined that certain label restrictions and revisions are necessary. These include:

   Ingredient Statement
   Precautionary Statements
   Environmental Hazards Statements
   Protective Clothing Requirements
   Reentry Interval

   The Regulatory Position and Rationale section discusses the Agency's position on each of these restrictions and the Required Labeling section contains the specific wording required for each of the labeling revisions.

B. PRELIMINARY RISK ASSESSMENT - DCPA/2,3,7,8-TCDD/HCB

1. DCPA

Numerous data gaps exist for DCPA and few definitive conclusions can be made prior to receipt of the required data. Therefore, only a hazard assessment will be presented for DCPA. Because this assessment is based on the data available, it is subject to change.

- Acute Toxicity. DCPA did not produce dermal sensitization in guinea pigs in a dermal sensitization study. There are no other acute data. DCPA products have been placed in Toxicity Category III and IV, based upon existing studies. When acute data required by this Registration Standard are submitted and reviewed, the Toxicity Category of DCPA will be reevaluated.

- Subchronic Toxicity. The Agency has no data on the subchronic oral, dermal, inhalation toxicity or neurotoxicity of DCPA. An acceptable chronic oral study in dogs is adequate for the required subchronic oral study in nonrodents. The chronic oral study in dogs is discusssed below under chronic toxicity.

- Chronic Oral Toxicity.

  a. Dog

  EPA has an acceptable study on the chronic oral toxicity of DCPA in dogs. In that study four male and four female beagle dogs were dosed with DCPA at 100, 1,000, and 10,000 ppm in their diet. One dog/sex/dose was sacrificed after one year and the remaining three/sex/dose were carried for a total of two years dosing. No compound-related effects were observed. The NOEL was 10,000 ppm, the highest dose tested. The study was deficient in terms of EPA Guideline testing protocols because the number of dogs carried to termination was too small and inadequate blood chemistry tests and histopathology were performed. Because the study was terminated at 2 years rather than at 1 year as currently required and there were no toxic effects, the study is acceptable for a chronic oral toxicity study in a nonrodent.

  b. Rat

  In a chronic toxicity study in rats, 35 male and 35 female rats were dosed with DCPA at 100, 1,000 and 10,000 ppm in their diets for 2 years. At termination of the study, the kidney weights in males and the adrenal weights of females were

2. Risk Assessment of the Manufacturing Impurities, 2,3,7,8-TCDD and HCB

The manufacturer of technical DCPA has identified two impurities 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) at levels of no greater than 0.1 ppb and hexachlorobenzene (HCB) at levels of no greater than 0.3 percent. The Agency's concern for the potential hazards from these low levels of impurities in DCPA products is discussed below. EPA has classified both of these impurities as Probable Human Carcinogens (Group B2).

a. Hazard Profile of 2,3,7,8-TCDD

Oncogenic effects

In September, 1985, the Agency published a Health Assessment Document for Polychlorinated Dibenzo-p-dioxins (MRID-40543002). The conclusions from this document were used to perform a preliminary risk assessment for the impurity, 2,3,7,8-TCDD in DCPA products. A brief summary of the qualitative and quantitative oncogenic assessment from that document is presented below. For an in-depth discussion refer to Section 11 and Appendix B of the document.

EPA classified 2,3,7,8-TCDD as a Probable Human Carcinogen (Group B2) based on "sufficient" animal bioassay data and "inadequate" evidence of human carcinogenicity (Refer to page 11 - 138 of the Health Assessment Document).

Assuming that 2,3,7,8-TCDD is oncogenic in humans, the Agency estimated an upper bound incremental unit cancer risk. Three animal studies were adequate for use in estimating the Q_1^* (i.e., greatest potency). The data are summarized as follows:

The Dow (1978) diet study on Sprague-Dawley rats, Spartan substrain, produced significantly increased cancers in the males, including stratified squamous cell carcinomas of the tongue and squamous cell carcinomas of the nasal turbinates and hard palate.

There was a significant increase in number of cancers in the lung, nasal turbinate and hard palate and liver tumors of females. As with the males, the total number of animals with at least one of these significant tumors was recorded. Both the original pathological analysis (Kociba) and that of an independent reviewer (Squire) were considered in estimating the Q_1^*.

The NCI gavage studies in Osborne Mendel rats and B6C3F1 mice are summarized as follows:

(a) 2,3,7,8-TCDD in male rats caused an increase in combined follicular cell adenomas and carcinomas combined of the thyroid. However, these tumors were not considered biologically significant for risk assessment purposes. In females, the combined neoplastic nodules and hepatocellular carcinomas were considered significant, and these data were used. The adrenal cortical adenomas or carcinomas were not considered biologically significant.

(b) 2,3,7,8-TCDD in male mice caused an increase in hepatocellular carcinomas and in combined hepatocellular adenomas and carcinomas. In female mice, 2,3,7,8-TCDD caused an increase in subcutaneous tissue fibrosarcomas, lymphomas or leukemias of the hematopoietic system, liver hepatocellular carcinomas and adenomas, and thyroid follicular cell adenomas.

The Agency calculated the Q_1^* (i.e., potency) based on multiple tumor sites in female Sprague-Dawley rats. The slope estimates obtained by using the slide readings of two different pathologists were averaged by taking the geometric mean and the final estimate was as follows:

$$Q_1^* = 1.56 \times 10^5 \text{ (mg/Kg/day)}^{-1}$$

Other toxic effects

2,3,7,8-TCDD also has been shown to induce teratogenic effects in mice (NOEL 0.1 ug/kg/day) and in rats (NOEL 0.03 ug/kg/day. In a 3-generation reproductive toxicity study in rats, 2,3,7,8-TCDD caused reduced fertility, with a NOEL of 0.001 ug/kg/day.

b. Hazard Profile of HCB

Oncogenic effects

In January, 1985, the Agency published a Health Assessment Document for Chlorinated Benzenes (MRID-40543001). The conclusions from this document were used to perform a preliminary risk assessment from the impurity, HCB, in DCPA pesticide products. A brief summary of the qualitative and quantitative oncogenic assessment from that document is presented below. For an in-depth discussion, refer to Section 12 of the document. EPA classified HCB as a Probable Human Carcinogen (Group B2) based on sufficient animal data in the absence of human data of carcinogenicity (Refer to page 12-120 of the Health Assessment Document).

Assuming that HCB is oncogenic in humans, the Agency estimated an upper-bound incremental unit cancer risk. Four animal studies were adequate for use in estimating the Q_1^* (i.e., potency).

Fourteen data sets which show significant increases of tumor incidences were used to calculate the carcinogenic potency of HCB. These include hepatomas and hemangioendothelioma of the liver in both sexes and thyroid adenomas in male Syrian golden hamsters (Cabral et. al., 1977), hepatomas in both sexes in Swiss mice (Cabral et. al., 1979), renal cell adenoma, hepatocellular carcinoma, and hepatoma in both sexes of Sprague-Dawley rats (Lambrecht, 1983) and adrenal pheochromocytoma in female Sprague-Dawley rats (Arnold et. al., 1985). The Q_1^* obtained from the hepatocellular carcinomas in the female Sprague-Dawley rats was used to calculate the cancer unit risk in the health assessment document and will be used to calculate the preliminary risk as a result of exposure to HCB from the uses of DCPA pesticide products. The estimate of greatest potency was determined to be:

$$Q_1^* = 1.7 \text{ (mg/Kg/day)}^{-1}$$

Other toxic effects

A 4-generation reproductive toxicity study of HCB in rats produced a NOEL of 20 ppm (1 mg/kg/day). The primary toxic effect observed was toxicity to the nursing pups. The effect was lethal at higher doses. No teratogenic effects were seen. The NOEL for maternal toxicity was 80 ppm (4 mg/kg/day).

c. Risks from Dietary Exposure

Potential dietary exposures to the impurities 2,3,7,8-TCDD and HCB may occur from the use of DCPA pesticide products on various vegetable crops. Tolerances for DCPA do not include allowable residues for these impurities. Because there are no actual crop residue data for these impurities, estimates of potential dietary exposures to them from DCPA use were calculated using DCPA tolerance levels. The Agency is requiring analyses for residues of 2,3,7,8-TCDD and HCB in or on agricultural commodities derived from crops treated with DCPA pesticide products.

In estimating dietary exposures, it was also assumed that the impurities are present in crop residues in the same proportion to DCPA as the impurities are found in the technical DCPA (i.e., 0.1 ppb 2,3,7,8-TCDD and 0.3% HCB).

Based upon data on the percent of sites treated with DCPA and the average residue contribution (ARC), the potential dietary oncogenic risks were calculated using the equation:

Risk = Exposure x Q^*

2,3,7,8-TCDD

Risk = 8×10^{-14} mg/kg/day x 1.6×10^{5} $(\text{mg/kg/day})^{-1}$

= 1×10^{-8}

HCB

Risk = 9×10^{-7} mg/kg/day x 1.7 $(\text{mg/kg/day})^{-1}$

= 2×10^{-6}

d. Risks from Non-dietary Exposure

Potential non-dietary exposures to 2,3,7,8-TCDD and HCB may result from applications of DCPA pesticide products in commercial vegetable production and to turf and home lawns. In calculating the potential exposures to these impurities from these uses, several assumptions were made. It was assumed that the impurities are present at the maximum levels found in the technical DCPA product. Estimated levels were then calculated based on estimated DCPA exposures. Actual exposure monitoring data were not available for DCPA; therefore, potential exposures were estimated based on surrogate data using maximum application rates. Exposure is expected to occur primarily via the dermal and oral routes. Data indicate that a dermal absorption rate for 2,3,7,8-TCDD may be less than 10%. However, in the absence of conclusive data on dermal absorption, a conservative rate of 50% was used. No data are available on HCB dermal absorption. Therefore, it was assumed to be 100% for the purpose of estimating non-dietary risks.

Agricultural workers in commercial vegetable production are likely to use a wettable powder formulation of DCPA twice a year (for a total of approximately 44 hours per year). Based on surrogate exposure data, potential cancer risks were calculated for dermal exposures to 2,3,7,8-TCDD and HCB from DCPA during mixing/loading operations and application using ground boom equipment. The potential risks were estimated to be 1×10^{-6} for 2,3,7,8-TCDD and 5×10^{-4} for HCB. The use of chemical resistant gloves will reduce exposures, and therefore potential risks, by approximately one order of magnitude.

Pest control operators (PCOs) and homeowners may be exposed to 2,3,7,8-TCDD and HCB during application of DCPA pesticide products to turf and home lawns. Children playing on treated lawns may also be exposed. The risk of adverse effects from these exposures are difficult to estimate because of the lack of information on foliar residues and on the rate of dissipation from the foliage. The Agency is requiring that certain exposure data be submitted in order to estimate dermal and oral exposures to children playing on treated lawns.

For PCOs, the potential cancer risks were estimated for dermal exposures to 2,3,7,8-TCDD and HCB from applying wettable powder formulations of DCPA with hose-end sprayers. It was assumed that lawns are treated twice a year and that PCOs mix, load, and apply DCPA an average of approximately 10 days per year. Based on surrogate exposure monitoring data, the estimated cancer risks are 1×10^{-6} for 2,3,7,8-TCDD and 6×10^{-4} for HCB. The use of chemical resistant gloves and clothing such as long pants and long-sleeved shirts will reduce exposures and the potential risks by approximately one order of magnitude.

Potential cancer risks to homeowners from dermal exposure to 2,3,7,8-TCDD and HCB during application of granular formulations of DCPA with a rotary spreader were calculated using surrogate exposure data. Based on the assumption that such an application takes approximately 2 hours, the potential cancer risks from 2 applications per year were estimated to be 3×10^{-8} for 2,3,7,8-TCDD and 2×10^{-5} for HCB. These risks will be reduced by approximately one order of magnitude if long-sleeved shirt, pants and chemical resistant gloves are worn during application.

Children playing on treated lawns may be exposed dermally by direct contact to the toxic impurities in DCPA pesticide products and orally by licking hands and fingers or exposed toys. However, exposures to children playing on lawns that have been treated with DCPA granules are expected to be primarily from ingesting the granules. Quantitative analysis of these potential exposures and potential risks is difficult due to a general lack of information on exposures to treated lawns and a lack of specific data from foliar dissipation and dislodgeable residue studies for DCPA and the impurities of concern. The Agency is requiring data needed for estimating such exposures.

In the absence of any data on exposures to DCPA and its impurities from contact with treated turf, an analysis was done based on assumptions. For wettable powder formulations, a worst case assumption is that 100% of the applied DCPA (and therefore 100% of the 2,3,7,8-TCDD and HCB residue) remains on the foliage; that is, none of these impurities reach the soil.

If it is further assumed that 2 days per year over a 10 year period a child's entire body comes in contact with these impurities and that a child licks the surface of a a 3" ball, the potential cancer risks are estimated to be 3×10^{-7} for 2,3,7,8-TCDD and 2×10^{-4} for HCB. The estimated cancer risk from ingesting two granules of DCPA per year for 10 years is 5×10^{-10} for 2,3,7,8-TCDD and 2×10^{-7} for HCB. The level of uncertainty in these estimates is great.

The Agency estimated the margin of safety (MOS) for professional and home applicators of DCPA using the NOELs from 3- and 4-generation reproductive studies of 2,3,7,8-TCDD and HCB, respectively. Although these are studies of chronic exposures and may not be the most appropriate basis for calculating MOSs for short term exposures to 2,3,7,8-TCDD and HCB from use of DCPA, they represent a worst case. For 2,3,7,8-TCDD the MOSs ranged from approximately 2,000 for PCOs to greater than 6,000 for homeowners. For HCB, the MOSs ranged from greater than 60 for professionals and 200 for homeowners.

C. OTHER SCIENCE FINDINGS

1. Environmental Fate. Environmental fate data are limited to one hydrolysis study and one mobility study. Data from the hydrolysis study indicated that DCPA is stable to hydrolysis in aqueous buffered sterile solutions adjusted to pH 5, 7 and 9 during 36 days of storage in the dark at 24 to 27 °C. Of the added DCPA (^{14}C) 98.9 percent remained undegraded at the end of 36 days of storage.

Data from the mobility (leaching and absorption/desorption study) indicated that DCPA (^{14}C) was immobile in four silt loam and one silty clay loam soils, based on soil thin layer chromatography tests. Irradiated DCPA (^{14}C) residues ranged from immobile to mobile in the same five soils. Monomethyltetrachloroterephthalate (MTP) and tetachlorotetraphthalic acid (TPA) were identified as degradates in the irradiated soil. This study does not fulfill data requirements for mobility of DCPA as it did not completely describe the analytical methods used, the moisture content of the soil was not maintained at 75% of 0.33 bar during aging, the soil was not adequately characterized, and distribution curves of DCPA and its degradates throughtout the soil columns were not determined. Another study must be submitted to fulfill this data requirement.

Hexachlorobenzene (HCB) is resistant to hydrolysis, photolysis and biodegradation. Being soluble in lipophilic materials, it is expected to be absorbed and to bioaccumulate in plants. However, it is not expected to biomagnify through aquatic food chains. The major source of HCB in aqueous organisms is from aqueous rather than dietary sources. Rates of depuration of HCB from exposed aquatic organisms are substantially more rapid than rates of depuration reported for such highly persistant compounds as DDT. Therefore, biomagnification of HCB through aquatic food chains probably does not occur. The Agency does not have adequate data to show that HCB is absorbed from soils or that it bioaccumulates in plant tissues.

2,3,7,8-TCDD is resistant to hydrolysis, photolysis and biodegration. An apparent half-life for 2,3,7,8-TCDD in soil is 10 to 12 years. Because of its high affinity towards soils, particularly those with significant organic content, and because of its extremely low water solubilities, 2,3,7,8-TCDD tends to remain in or near the surface of soils. With time, 2,3,7,8-TCDD bound to soil becomes more difficult to desorb. Limited data show that 2,3,7,8-TCDD is not likely to concentrate in plants grown in contaminated soil. 2,3,7,8-TCDD will bioaccumulate in aquatic organisms.

2. Ecological Effects. Formulated DCPA products are slightly to practically nontoxic to finfish. They are practically nontoxic to aquatic invertebrates. Formulations of DCPA are moderately to practically nontoxic to aquatic invertebrates. Technical grade DCPA had an LC_{50} of 620 ug/L in eastern oysters, which is highly toxic. There are adequate data to suggest there is no acute hazard to endangered aquatic species. No terrestrial endangered plants have been identified with any of the use-patterns of DCPA products.

3. Ground Water. A ground water data call-in (DCI) notice was issued for DCPA in July, 1984. Based on the data received from that DCI, the Agency is requiring further ground water monitoring to determine the extent of ground water contamination with DCPA.

   DCPA metabolites have been detected in ground water in New York at 50 to 700 ppb. In Suffolk County, New York, 166 wells were tested for DCPA and DCPA degradates. There were 25 detections of DCPA acid degradates. The maximum concentration was 1039 ppb.

   In a Cape Cod golf course study, three detections of DCPA acid degradates were made. The concentration ranged from 0 to 0.35 ppb; the mean value was equal to 0.26 ppb. In California, DCPA was detected four times in 1984 at a maximum concentration of 35 ppb in ground water. In Wisconsin, DCPA acid degradates were detected in ground water in Dunn and Wankesha Counties at a mean value of 254.66 ppb.

   In November, 1987, the Agency proposed a lifetime health advisory level for DCPA of 3500 ppb in drinking water. DCPA and it degradates, which are considered to be toxicologically equivalent to the parent compund, have been found to date in ground water at levels below 1500 ppb. However, because of the low number of observations, no conclusions can be drawn about the significance of these findings.

   Because HCB and 2,3,7,8-TCDD occur in such low quantities in DCPA, the presence of these impurities in DCPA are not of ground water concern. Furthermore, these impurities are considered to be persistent, but non-mobile and are therefore not expected to move into ground water.

D. TOLERANCE REASSESSMENT

Tolerances have been established for residues of DCPA in or on the raw agricultural commodities listed in Table 1. Tolerances for DCPA are presently expressed as the herbicide dimethyl tetrachloroterephthalate and its metabolites monomethyl tetrachloroterephthalate (MTP) and tetrachloroterephthalic acid (TPA) (calculated as dimethyl tetrachloroterephthalate). The metabolism of DCPA in plants is not adequately understood. Metabolism studies in lettuce, turnip and onion plants exposed to the maximum quantity permitted under existing registered labeling must be conducted to resolve this data gap.

There are no established tolerances for DCPA residues in animal fat, meat, and meat by-products, or in eggs or milk. The available studies on the metabolism of DCPA in ruminants did not investigate the nature of ^{14}C residues found in tissues or milk. Nonradiolabeled studies have detected the metabolites MTP and TPA in ruminants and poultry. Therefore, studies are required with ruminants and poultry using ring-labeled (^{14}C) DCPA at a level sufficient to make residue identification and quantification possible. Milk and eggs must be collected twice daily during the dosing period. Animals must be sacrificed within 24 hours of the final dosing. The distribution and identity of the residues must be determined in milk, liver, kidney, muscle and fat.

Samples from the studies requested above should also be analyzed using current enforcement methods to ascertain the validity of these methods for analysis of animal commodities. Upon receipt of the requested data, the need for and nature of tolerances for DCPA residues in animals products will be determined.

Adequate gas-liquid chromatography (GLC) methods utilizing either electron capture (EC) or microcoulometric (MC) detection are available for collection of data pertaining to residues of DCPA and its metabolites MTP and TPA in or on plant commodities. The GLC/MC method described in MRID 00114642 is listed in PAM Vol. II as Method B. The GLC/EC and GLC/MC methods must undergo method validations to demonstrate their adequacy for tolerance enforcement purposes. A colorimetric method is adequate for collection of residue data for DCPA but does not determine MTP and TPA residues. Colorimetric methods are not adequate for tolerance enforcement.

At the present time, no tolerances exist for residues of DCPA and its metabolites MTP and TPA (calculated as DCPA) in animal commodities, although registered uses exist on crops which may result in residues in or on feed items. Adequate GLC analytical methods that determine separate and combined residues of DCPA, MTP, and TPA residues in animal commodities are available. A method validation must be conducted to demonstrate method residues in animal commodities proposed as a result of data requirements.

Table 1. Tolerances in parts per million (ppm) for residues of DCPA and metabolites MTP and TPA.

Raw Agricultural Commodity	Residues of DCPA U.S.	Canada	Parts per Million Mexico	Codex
Beans, field dry	2	-	-	-
Beans, mung, dry	2	-	-	-
Beans, snap, succulent	2	-	-	-
Broccoli	1	-	-	-
Brussels sprouts	1	-	-	-
Cabbage	1	-	-	-
Cantaloupes	1	-	-	-
Cauliflower	1	-	-	-
Collards	2	-	-	-
corn, field, fodder	0.4	-	-	-
corn, field, forage	0.4	-	-	-
Corn, grain (including field and pop)	0.05	-	-	-
corn, pop, fodder	0.4	-	-	-
Corn, pop, forage	0.4	-	-	-
Corn, sweet (K + CWHR)	0.05	-	-	-
Corn, sweet, fodder	0.4	-	-	-
Corn, sweet, forage	0.4	-	-	-
Cottonseed	0.02	-	-	-
Cress, upland	5	-	-	-
Cucumbers	1	-	-	-
Eggplant	1	-	-	-
Garlic	1	-	-	-
Honeydew melons	1	-	-	-
Horseradish	2	-	-	-
Kale	2	-	-	-
Lettuce	2	-	-	-
Mustard, greens	5	-	-	-
Onions	1	-	-	-
Peas, southern, black-eyed	2	-	-	-
Peppers	2	-	-	-
Pimentos	2	-	-	-
Potatoes	2	-	-	-
Radish, roots	2.0	-	-	-
Radish, tops	15.0	-	-	-
Rutabagas	2	-	-	-
Soybeans	2	-	-	-
Squash, summer	1	-	-	-
Squash, winter	1	-	-	-
Strawberries	2	-	-	-
Sweet potatoes	2	-	-	-
Tomatoes	1	-	-	-
Turnips	2	-	-	-
Turnips, greens	5	-	-	-
Watermelons	1	-	-	-
Yams	2	-	-	-

DCPA and its metabolite MTP have been subjected to one or more multiresidue protocols in PAM Vol. 1. However, there are no multiresidue procedures for TPA. The Residue Chemistry Data Requirements in 40 CFR 158.125(a) require that regulated pesticides be subjected to one or more of the multiresidue procedures published in an Addendum to Pesticide Assessment Guidelines Subdivision O-Residue Chemistry Data Requirements for Analytical Methods in 40 CFR 158.125, Multiresidue Protocols. Such testing has not been conducted on TPA.

The storage stability data available are inadequate to support the broad range of agricultural commodities with established tolerances. Information on the duration and conditions of sample storage prior to residue analysis and on the stability of DCPA under the storage conditions used must be submitted to support established tolerances.

Data gaps exist for each of the raw agricultural commodities listed in the following table. Of particular concern is the lack of data on the potential metabolites, the potential for residues of DCPA to exist in processed commodities derived from these raw agricultural commodities, and the potential for residues in fat, meat, meat by-products, milk, and eggs of domestic animals. The data requirements to support established tolerances as listed in 40 CFR 180.185 are given in Table A, Appendix I.

The Agency is also requiring data to show the nature of the residues of DCPA impurites and the magnitude of these residues on representative agricultural commodities. These data requirements are described in Table A, Appendix I.

There are no food or feed additive regualations for DCPA established under Section 409 of the Federal Food, Drug and Cosmetic Act.

There are no direct animal treatments for DCPA on livestock or poultry. At the present time, it is not possible to calculate the maximum expected intake of DCPA residues by dairy cattle, beef cattle, poultry, or swine.

Many livestock feed items derived from plants grown in DCPA treated soils have no established tolerances or they have tolerances that are inadequately supported by available residue chemistry data. If the required animal metabolism data demonstrate that detectable residues of concern may occur in animals from registered uses, then data quantifying the magnitude of the residue in animals will be required. Specific data requirements will be detailed at that time.

For the U.S. population, the Theoretical Maximum Residue Contribution (TMRC) from established tolerances is 0.394 mg/day (equivalent to an exposure of 0.006574 mg/kg/day for a 60 kg person), based on a 1.5 kg diet and a 60 kg person. Based on a chronic toxicity study in rats, the Provisional Acceptable Daily Intake (PADI) was established at 0.5 mg/kg/day, based on the NOEL of 50 mg/kg/day and a 100 fold uncertainty factor to account for data gaps and extrapolation from animal data to humans. The Maximum Permissible Intake (MPI) for a 60 kg person is, therefore, 30.0 mg/day. Using this value, existing tolerances utilize 1.3% of the PADI. The TMRC is a conservative estimate because it does not consider the effect of processing on residue levels in the raw agricultural commodities, that actual residue levels may be lower than the established tolerances, and that less than 100 percent of the crop is treated. Available FDA monitoring data for DCPA indicate that actual residues are less than tolerance levels.

The PADI used in this assessment was based on a rat feeding study that indicated a 0.5 mg/kg/day NOEL based on effects on kidney weights in males and adrenal weights in females. A PADI was established rather than an ADI because the study was not acceptable under present EPA Guidelines. Data required under this Standard will likely change this assessment.

For the U.S. population of children from 1 to 6 years of age the TMRC from established tolerances is equivalent to an exposure of 0.011749 mg/kg/day based on the EPA Tolerance Assessment System. This is the greatest exposed segment of the US population as determined under the EPA Tolerance Assessment System.

The Federal Food and Drug Administration's (FDA) tolerance monitoring "Total Diet Study Market Basket", over a period between April 1982 and April 1986, found no residues of DCPA exceeding established tolerances in any food item. DCPA residues occurred in the following food items for which no tolerances exist: raw apples (0.0004 - 0.004 ppm), chili con carne with beef (0.002 - 0.004 ppm), pear/pears with pineapple (0.002 ppm), canned spinach (0.0008 - 0.001 ppm), boiled spinach (0.0003 - 0.004 ppm), fried breaded shrimp (0.002 ppm) and tuna canned in oil (0.002 ppm).

During the period of 1978 to 1987, the FDA reported finding only two samples of imported lettuce that exceeded the U.S. established tolerance for residues of DCPA in or on lettuce.

IV. REGULATORY ASSESSMENT

A. REGULATORY POSITIONS AND RATIONALES

Based on review and evaluation of all available data on DCPA, the Agency has made the following determinations:

1. Special Review

The Agency will not place DCPA into Special Review at this time.

Rationale: There are presently no chronic toxicological concerns for exposures to DCPA and there are insufficient data to indicate unreasonable hazard to wildlife or endangered species. However, the Agency's evaluation of DCPA has raised concerns about the chronic toxicological effects of two manufacturing impurities, 2,3,7,8-TCDD and HCB, which cannot be resolved by the available information. The Agency performed a preliminary risk assessment based on the assumption that the impurities, HCB and 2,3,7,8-TCDD are found in DCPA residues in the same proportion as they are found in the technical product. Exposures to HCB and 2,3,7,8-TCDD were calculated to constitute 0.3 percent and 0.1 parts per billion, respectively, of the estimated exposure to DCPA. The results of this risk assessment are presented in Section III (Agency Assessment) of this Standard.

The uncertainties of this risk assessment are very great. Therefore, the Agency is requiring that the registrant develop additional exposure data for the impurities. In order to assess the potential risk from dioxin contamination, additional data are needed to determine whether DCPA is contaminated by other species of chlorinated dibenzo-p-dioxins or furans. These data were requested in a data call-in Notice issued in June, 1987. When the information on the presence of any additional dibenzo--p-dioxins or dibenzofurans is available, the Agency will reevaluate the risk from the use of DCPA products. However, at the present time the risk due to 2,3,7,8-TCDD from the use of DCPA is not considered to be unreasonable. The highest risk estimated was 10^{-6} for agricultural applicators and PCO's.

The risks due to HCB from the use of DCPA are 10^{-4} for agricultural applicators and PCOs. While these levels are of concern, the Agency believes that the risk to applicators can be reduced to acceptable levels by using protective clothing.

The Agency's preliminary risk assessment also showed that the risks due to HCB from the use of DCPA to treat lawns could be as high as 10^{-4} for children exposed while playing on treated lawns. The Agency believes however that the uncertainties in the exposure assessment for HCB are so great that the preliminary risk assessment cannot be used as a basis for determining whether criteria for initiating a Special Review have been exceeded. The risk calculated for a child is assumed to be the worst-case and probably is greatly over-estimated. In making the exposure estimates, the Agency made assumptions about the frequency of exposure, the amount of HCB that is present, the rate of HCB absorption through various routes, and the occurrence of behaviors (such as eating DCPA granules, eating foliage or soil that has been treated with DCPA, or licking toys that have come into contact with DCPA-treated foliage or soil) which could result in exposures much higher than would occur through the dermal route. In order to develop a better assessment of exposure, the Agency is requiring dislodgeable residue and foliar dissipation data on HCB. When this information becomes available, the Agency will reconsider its decision on initiating a Special Review on DCPA.

The Agency's preliminary assessment of HCB risk showed that dietary exposure to HCB present as an impurity in DCPA resulted in a risk of 2×10^{-6}. The Agency believes this risk to be acceptable during the period in which additional data are developed. The Agency is requiring the submission of metabolism and residue data on this impurity to resolve the issue of dietary exposure.

2. Restricted Use

The Agency is not classifying any DCPA products or uses as being for restricted use.

Rationale: As discussed above, the uncertainties in the exposure assessments for HCB are very great. Accordingly, the Agency is unable to conclude that the risk posed by HCB warrants action to classify DCPA as a restricted use pesticide. Data needed to quantify the risks of HCB and other contaminants are identified in this Standard. When these data become available, the Agency will reconsider its position on the classification of DCPA.

As discussed below, the Agency is imposing requirements for protective clothing and reentry intervals which it believes will reduce exposure to the contaminants of concern for applicators and other persons who may be at risk.

3. Certification of Limits of Impurities

The Agency is requiring DCPA registrants to certify that technical DCPA used in formulating their end-use products does not contain 2,3,7,8-TCDD and HCB in excess of 0.1 ppb and 0.3 percent, respectively. In addition, the Agency is requiring establishment of certified limits for any other tetra- through hepta- chlorinated dibenzo-p-dioxin or dibenzofuran that may be present in technical DCPA.

Rationale. The Agency is aware that 2,3,7,8-TCDD and HCB are formed during the manufacture of DCPA. The Agency has based its decision not to initiate Special Review or to restrict the use of DCPA on the belief that the contaminant levels in technical DCPA that is used to prepare commercial products do not exceed the reported maximum levels. If the levels of the impurities are higher than specified above, the risks posed by these impurities would be correspondingly higher. The Agency therefore concludes that establishment of certified limits for these impurities is necessary to minimize the risk posed by these substances.

The Agency has already required registrants to establish certified limits for certain species of chlorinated dibenzo-p-dioxins and dibenzofurans in the June, 1987 dioxin/furan data call-in Notice.

4. Significant New Uses

The Agency will not register any significant new uses of DCPA until product chemistry, toxicology and residue chemistry data it is requiring in this Standard have been submitted and found to be acceptable for assessing the proposed uses and demonstrate that the proposed uses will not result in unreasonable risks.

Rationale: The data gaps in these areas are such that registrations of significant new uses of DCPA should await submission and evaluation of the critical data required by this Standard.

5. Ground Water

The Agency is requiring ground water monitoring studies on DCPA and its degradates to determine the extent of ground water contamination.

Rationale: DCPA and its degradates have been found in ground water samples in four states. The Agency has proposed a lifetime health advisory level for DCPA of 3500 ppb in drinking water. DCPA and it degradates, which are considered to be toxicologically equivalent to the parent compound, have been found to date in ground water at levels below 1500 ppb. Because of the low toxicity of the compound, the low levels observed to date and the limited number of observations, the Agency does not feel that regulatory action, other than retrospectove ground water monitoring studies, is warranted.

6. Protective Clothing

In order to meet the statutory standard for continued registration, the Agency is requiring the use of certain minimum protective clothing and equipment for end-use products. The required labeling language is found in Section IV.D. of this document.

Rationale: Based on the potential risk of chronic effects from the impurities 2,3,7,8-TCDD and HCB in DCPA products, the Agency finds these requirements necessary to protect the public. The wearing of long-sleeved shirt, long-legged pants and chemically resistant gloves and the washing of exposed skin and contaminated clothing as prescribed in the required labeling will reduce exposure to DCPA products and decrease the risk of adverse effects.

7. Reentry Intervals

In order to meet the statutory standard for continued registration, the Agency is requiring an interim 24-hour reentry interval for agricultural crop uses of DCPA until required reentry data have been submitted, evaluated, and found to support a different reentry interval. The required labeling language is found in Section IV.D. of this document.

Rationale: DCPA meets the toxicity criteria of 40 CFR 158.140 related to reentry restrictions because there is evidence which indicates that its impurities 2,3,7,8-TCDD and HCB are oncogenic, mutagenic, or cause developmental effects. DCPA also meets the exposure criteria of 40 CFR 158.140 for requiring a reentry period because it is registered for uses which could involve substantial exposure of agricultural workers to residues of its impurities 2,3,7,8-TCDD and HCB. Until data are submitted, as required in Appendix I, which demonstrate that either a longer or shorter reentry interval is appropriate for DCPA, the interim 24-hour reentry interval will serve to reduce post-application exposure to 2,3,7,8-TCDD and HCB in DCPA products. (The Agency imposes a 24-hr reentry level whenever it finds that reentry retrictions are warranted, but lacks data to characterize the residues present during the post-application period.)

8. Dietary Exposure Data on Impurities

The Agency is requiring the following studies on impurities in DCPA to support registration of food uses of DCPA: product chemistry, plant and animal metabolism, storage stability, analytical methodology and the magnitude of residues in or on representative raw agricultural commodities.

Rationale: Current estimates of dietary risk from DCPA impurities are based on the assumption that the impurities are present in DCPA residues on food in the same proportion as they occur in the pesticide product. Data are needed to determine the nature and magnitude of 2,3,7,8-TCDD and HCB residues. If the data show that the impurities or their metabolites accumulate in DCPA-treated agricultural commodities to levels that raise concerns about dietary risk, the Agency may find that additional regulatory action is warranted.

9. Environmental Fate Data on Impurities

The Agency is requiring dislodgeable residue and foliar dissipation data on HCB in order to estimate dermal exposure to this impurity.

Rationale: The Agency has based its preliminary risk assessment of non-dietary risk from environmental HCB residues on the assumption that HCB are present in DCPA residues on soil or foliage in the same proportion as it occurs in the pesticide product. Data are needed to determine the fate of soil and foliar HCB residues in order to refine the estimates of HCB exposure to farm workers and to users of lawns that have been treated with DCPA.

10. Data Designated for Priority Review

The Agency has identified certain data requirements that will receive priority review when received.

Rationale: Certain data are essential to the Agency's assessment of this pesticide product and its uses and may trigger the need for further studies that should be initiated as soon as possible. The following studies have been identified for priority review when received by the Agency:

158.120 Product Chemistry

- 61-2 Description of Beginning Materials and Manufacturing Process
- 61-3 Discussion of Formation of Impurities
- 62-1 Preliminary Analysis

158.125 Residue Chemistry - DCPA

- 171-4 Nature of Residue (Metabolism)
  - -Plants
  - -Livestock
- 171-4 Residue Analytical Method
  - -Plant Residues
  - -Animal Residues
- 171-4 Storage Stability Data

158.125 Residue Chemistry - Impurities

- 171-4 Nature of Residue (Metabolism)

-Plants
-Livestock
171-4 Residue Analytical Method
-Plant Residues
-Animal Residues
171-4 Storage Stability Data

158.130 Environmental Fate

163-1 Leaching and Adsorption/Desorption
132-1 Foliar Dissipation
133-3 Dermal Exposure (Conditional, at option of Registrant)
133-4 Inhalation Exposure (Conditional, at option of Registrant)
-- Ground Water Monitoring

11. Currently Registered Uses

While the data gaps are being filled, currently registered MPs and EPs containing DCPA as an active ingredient may be sold, distributed, formulated, and used, subject to the terms and conditions described in this Standard. Registrants must provide or agree to develop additional data, as specified in the Data Appendices of this document, in order to maintain existing registrations.

Rationale: Under FIFRA, the Agency may choose not to cancel or withhold pesticide registration if data are missing or inadequate (see FIFRA sections 3(c)(2)(B) and 3(c)(7)).

Issuance of this Registration Standard provides a mechanism for identifying data needs. When these data are submitted, they will be reviewed and evaluated, after which the Agency will determine if additional regulatory action is warranted.

B. CRITERIA FOR REGISTRATION

To be registered or reregistered under this Standard, products must contain DCPA as one of the active ingredients, bear required labeling, and conform to the applicable composition, acute toxicity limits, and use pattern requirements listed in this section.

C. ACCEPTABLE RANGES AND LIMITS

1. Product Composition Standard

To be registered or reregistered under this Standard, products must contain DCPA as one of the active ingredients. Each MP product proposed for registration must be fully described with an appropriate certification of limits, stating maximum and minimum amounts of the active ingredient and inert ingredients that are present in the product, as well as impurities found at levels greater than 0.1 percent.

2. Acute Toxicity Limits

The Agency will consider registration of technical grade and manufacturing-use products containing DCPA provided that the product labeling bears appropriate precautionary statements for the acute toxicity category in which each product is placed.

3. Use Patterns

To be registered under this Standard, EPs may be labeled only for the uses listed below. The Index lists all registered uses, as well as approved application rates and frequencies.

- Terrestrial Food Crops:

Agricultural Food Crops: Beans (dry, field, snap), broccoli, Brussels sprouts, cabbage, cantaloupe, cauliflower, collards, corn (field), corn (sweet), cotton, cress (upland), cucumber, eggplant, garlic, honeydew melon, horseradish, kale, leeks, lettuce (head), lettuce (leaf), mung beans, mustard greens, onions, peppers, potato (whole or cut pieces), Southern beans (blackeyed peas), radish (grown for seed), soybeans, squash, strawberry, sweet potatoes, tomato, turnip (greens), turnip (roots), watermelon, yams (*Ipomoea* spp.).

Terrestrial Nonfood Crop:

Ornamental Plants and Ornamemtal Forest Trees: abelia, African violet, ageratum, ajuga, alyssum, arborvitae, ash, aster, athletic field turf, Austrian pine, azalea, baby's breath, barberry, bellflower, birch, bleeding heart, bloodleaf, blue bedder salvia, blue spruce, border forsythia, Boston ivy, boxwood, bugloss, California privet, camellia, candle larkspur, candy tuft, Cape marigold, chestnut, chrysanthemum, cinquefoil, coleus, columbine, coneflower, coral bells, coreopsis, cotoneaster, cottonwood, creeping juniper, creeping thyme, cuphea, cypress, dahlias, daisies, deutzia, dogwood, dwarf forsythia, elaeagnus, elm, English ivy, English ivy (ground cover), euonymus, evening primrose, fernleaf, yarrow, feverfew, fir, flowering crabapple, forget-me-not, forsythia, four-o-clock, foxglove, gaillardia, geranium, gladiolus, gold dust, golden marguerite, goldentuft, golf fairways/golf greens, ground-hemlock, gum, hawthorn, heath, holly, honeysuckle, hybrid tea roses, hydrangea, iris, ivy (ground cover), Japanese andromeda, Japanese barberry, Japanese privet, Japanese yew, juniper, lantana, larkspur, lavender cotton, liqustrum, lilac, lilies, loblolly pine, locust, lupines, magnolia, maple, marigold, mentor barberry, mock-orange, morning-glory, mountain-laurel, multiflora rose, nasturtium, oak, orpine, pachysandra, pachysandra (ground cover), paxistima, peonies, petunias, pine, pittosporum, ponderosa pine, poplar, podocarpus, purple coneflower, red pine, redbud, rhododendron, rose, rose moss, Russian olive, salvia, scabiosa, scarlet sage, Scotch pine, shore pine, snapdragon, spiderwort, spirea, spruce, stonecrop, strawflower, sundrops, sunflowers, sweet pea, sycamore, torch lily, tree peony, tulip tree, variegated privet, verbena, violets, wallflower, walnut, weigela, white spruce, willow, wormwood, yarrow, yellow pine, yew and zinnia.

- Domestic Outdoor:

Ornamental plants and forest trees - Bermudagrass (from sod), ornamental lawns, zoysia grass (from sod).

D. REQUIRED LABELING

In order to remain in complaince with FIFRA, manufacturing and end-use products must bear appropriate labeling as specified in 40 CFR 162.10 and PR Notices 83-2 and 83-3. Appendix II contains information on label requirements.

No pesticide product containing DCPA may be released for shipment by a registrant twelve months after receipt of this Standard unless the product bears an amended label which complies with the requirements of this Standard.

No pesticide product containing DCPA may be distributed, sold, offered for sale, held for sale, shipped, delivered for shipment, or received and (having been so received) delivered or offered to be delivered by any person 24 months from the date of receipt of this Standard unless the product bears an amended label which complies with the requirements of this Standard.

The following information must appear on the labeling of DCPA products to remain in compliance with FIFRA:

1. Ingredient Statement

The ingredient statement for all products must identify the active ingredient as:

Active Ingredient:	By Wt.
DCPA (dimethyl tetrachloroterephthalate)	%
Inert Ingredients:	%

2. Precautionary Statements

All products must bear the following precautionary statement:

> Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling.

3. Environmental Hazards Statements

a. Manufacturing Use Products

All MP labeling must bear the following environmental hazard statement:

> Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or public waters unless this product is specifically identified and addressed in an NPDES permit. Do not discharge effluent containing this product to sewer systems without previously notifying the sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

b. End Use Products

1) All nongranular products must bear the following environmental hazard statements:

> Do not apply directly to water or wetlands (swamps, bogs, marshes, and potholes). Do not contaminate water when disposing of equipment wastewater.

2) All granular products must bear the following environmental hazard statements:

> Collect and incorporate granules spilled on the soil surface. Do not apply directly to water or wetlands (swamps, bogs, marshes, and potholes). Do not contaminate water by cleaning of equipment or disposal of wastes.

4. Use Statements and Worker Protection

a. Manufacturing Use Products - None.

b. End Use Products - The following statements must be included in the "Directions for Use" as specified:

1) All EPs labeled for Agricultural Uses and Commercial Ornamental Plant Uses must bear the following statements:

> USE ONLY WHEN WEARING THE FOLLOWING PROTECTIVE CLOTHING AND EQUIPMENT DURING MIXING/LOADING AND APPLYING, REPAIR AND CLEANING OF MIXING, LOADING, AND APPLICATION EQUIPMENT, DISPOSAL OF THE PESTICIDE, AND EARLY REENTRY INTO TREATED AREAS: Wear a long-sleeved shirt and long-legged pants and chemical resistant gloves.
>
> IMPORTANT! If pesticide comes in contact with skin, wash off with soap and water. Always wash hands, face, and arms with soap and water before smoking, eating, drinking, or toileting.
>
> AFTER WORK: Before removing gloves, wash them with soap and water. Take off all work clothes and shoes. Shower using soap and water. Do not reuse contaminated clothing. Clothing worn during work must be laundered separately from household articles. Clothing that becomes heavily contaminated or drenched must be destroyed according to State and local regulations. HEAVILY CONTAMINATED OR DRENCHED CLOTHING CANNOT BE ADEQUATELY DECONTAMINATED.

2) All EPs labeled for homeowner uses must bear the following statements:

> USE ONLY WHEN WEARING THE FOLLOWING PROTECTIVE CLOTHING:
>
> Wear long-sleeved shirt and long-legged pants and chemical resistant gloves.

IMPORTANT! If the pesticide comes in contact with skin wash off with soap and water. Always wash hands, face, and arms with soap and water before smoking, eating, drinking, or toileting.

AFTER USE: Before removing gloves, wash them with soap and water. Take off all work clothes and shoes. Shower using soap and water. Do not reuse contaminated clothing. Clothing worn during use must be laundered separately from household articles.

3) All EPs labeled for agricultural crop use must bear the following statement:

Do not enter treated areas for 24 hours after application unless wearing long sleeved shirt and long pants.

5. Statements of Practical Treatment

All products must bear the following statements of practical treatment:

If in Eyes: Flush with plenty of water. Call a physican if irritation persists.

V. PRODUCTS SUBJECT TO THIS STANDARD

All products containing one or more of the pesticides identified in Section II.A. are subject to certain requirements for data submission or changes in composition, labeling or packaging of the product. The applicable requirements depend on whether the product is a manufacturing or end use product and whether the pesticide is the sole active ingredient or one of multiple active ingredients.

Products are subject to this Registration Standard as follows:

A. Manufacturing use products containing this pesticide as the sole active ingredient are subject to:

1. The restrictions (if any) upon use, composition, or packaging listed in Section IV, if they pertain to the manufacturing use product.
2. The data requirements listed in Tables A and B[2]
3. The labeling requirements specified for manufacturing use products in Section IV.
4. Administrative requirements (application forms, Confidential Statement of Formula, data compensation provisions) associated with reregistration.

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[2] Data requirements are listed in the three Tables in Appendix I of this Registration Standard. The Guide to Tables in that Appendix explains how to read the Tables.

Table A lists generic data requirements applicable to all products containing the pesticide subject to this Registration Standard. Table B lists product-specific data applicable to manufacturing use products. The data in Tables A and B need not be submitted by a producer who is eligible for the formulator's exemption for that active ingredient.

Table C lists product-specific data applicable to end use products. The Agency has decided that, in most cases, it will not require the submission of product-specific data for end use products at this time. Therefore most Registration Standards do not contain a Table C.

B. Manufacturing use products containing this pesticide as one of multiple active ingredients are subject to:

1. The data requirements listed in Table A.

2. The labeling requirements specified for manufacturing use products in Section IV.

C. End use products containing this pesticide as the sole active ingredient are subject to:

1. The restrictions (if any) upon use, composition, or packaging listed in Section IV if they pertain to the end use product.

2. If eligible for the formulator's exemption[3], the data requirements listed in Table C.

3. If not eligible for the formulator's exemption, the data requirements listed in Table A and the data requirements listed in Table C.

4. The labeling requirements specified for end use products in Section IV.

D. End use products containing this pesticide as one of multiple active ingredients are subject to:

1. If not eligible for the formulator's exemption, the data requirements listed in Tables A and C.

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[3] If you purchase from another producer and use as the source of your active ingredient only EPA-registered products, you are eligible for the formulator's exemption for generic data concerning that active ingredient (Table A) and product-specific data for the registered manufacturing use product you purchase (Table B).

Two circumstances nullify this exemption:

1) If you change sources of active ingredient to an unregistered product, formulate your own active ingredient, or acquire your active ingredient from a firm with ownership in common with yours, you individually lose the exemption and become subject to the data requirements in Table A.

2) If no producer subject to the generic data requirements in Table A agrees to submit the required data, all end use producers lose the exemption, and become subject to those data requirements.

2. If eligible for the formulator's exemption, the data requirements listed in Table C.

3. The labeling requirements specified for end use products in Section IV.

VI. REQUIREMENT FOR SUBMISSION OF GENERIC DATA

This portion of the Registration Standard is a notice issued under the authority of FIFRA sec. 3(c)(2)(B). It refers to the data listed in Table A, which are required to be submitted by registrants to maintain in effect the registration of products containing this active ingredient.[4]

A. What are generic data?

Generic data pertain to the properties or effects of a particular active ingredient. Such data are relevant to an evaluation of all products containing that active ingredient regardless of whether the product contains other ingredients (unless the product bears labeling that would make the data requirement inapplicable).

Generic data may also be data on a "typical formulation" of a product. "Typical formulation" testing is often required for ecological effects studies and applies to all products having that formulation type. These are classed as generic data, and are contained in Table A.

B. Who must submit generic data?

All current registrants are responsible for submitting generic data in response to a data request under FIFRA sec. 3(c)(2)(B) (DCI Notice). EPA has decided, however, not to require a registrant who qualifies for the formulator's exemption (FIFRA sec. 3(c)(2)(D) and § 152.85) to submit generic data in response to a DCI notice if the registrant who supplies the active ingredient in his product is complying with the data request.

If you are granted a generic data exemption, you rely on the efforts of other persons to provide the Agency with the required data. If the registrants who have committed to generate and submit the required data fail to take appropriate steps to meet the requirements or are no longer in compliance with this data requirements notice, the Agency will consider that both they and you are not in compliance and will normally initiate proceedings to suspend the registrations of both your product(s) and their product(s) unless you commit to submit and submit the required data in the specified timeframe. In such cases, the Agency generally will not grant a time extension for submitting the data.

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[4] Registrations granted after issuance of this Standard will be conditioned upon submission or citation of the data listed in this Registration Standard.

If you are not now eligible for a formulator's exemption, you may qualify for one if you change your source of supply to a registered source that does not share ownership in common with your firm. If you choose to change sources of supply, the Confidential Statement of Formula must identify the new source(s) and you must submit a Formulator's Exemption Statement form.

If you apply for a new registration for products containing this active ingredient after the issuance of this Registration Standard, you will be required to submit or cite generic data relevant to the uses of your product if, at the time the application is submitted, the data have been submitted to the Agency by current registrants. If the required data have not yet been submitted, any new registration will be conditioned upon the new registrant's submission or citation of the required data not later than the date upon which current registrants of similar products are required to provide such data. See FIFRA sec. 3(c)(7)(A). If you thereafter fail to comply with the condition of that registration to provide data, the registration may be cancelled (FIFRA sec. 6(e)).

C. What generic data must be submitted?

You may determine which generic data you must submit by consulting Table A. That table lists the generic data needed to evaluate current uses of all products containing this active ingredient, the uses for which such data are required, and the dates by which the data must be submitted to the Agency.

D. How to comply with DCI requirements.

Within 90 days of your receipt of this Registration Standard, you must submit to EPA a completed copy of the form entitled "FIFRA Section 3(c)(2)(B) Summary Sheet" (EPA Form 8580-1, enclosed) for each of your products. On that form you must state which of the following six methods you will use to comply with the DCI requirements:

1. You will submit the data yourself.

2. You have entered into an agreement with one or more registrants to jointly develop (or share in the cost of developing) the data, but will not be submitting the data yourself. If you use this method, you must state who will submit the data on which you will rely. You must also provide

EPA with documentary evidence that an agreement has been formed which allows you to rely upon the data to be submitted. Such evidence may be: (1) your letter offering to join in an agreement and the other registrant's acceptance of your offer, (2) a written statement by the parties that an agreement exists, or (3) a written statement by the person who will be submitting the data that you may rely upon its submission. The Agency will also require adequate assurance that the person whom you state will provide the data is taking appropriate steps to secure it. The agreement to produce the data need not specify all of the terms of the final arrangement between the parties or a mechanism to resolve the terms.

If you and other registrants together are generating or submitting requested data as a task force or consortium, a representative of the group should request a Joint Data Submitter Number from the Registration Support and Emergency Response Branch, Registration Division. The request must include the following information:

a. A list of the members of the consortium;
b. The name and address of the designated representative of the consortium, with whom EPA will correspond concerning the data;
c. Identity of the Registration Standard containing the data requirement;
d. A list of the products affected (from all members of the consortium); and
e. Identification of the specific data that the consortium will be generating or submitting.

The Agency will assign a number to the consortium, which should be used on all data submissions by the consortium.

3. You have attempted to enter into an agreement to jointly develop data, but no other registrant has accepted your offer. You request that EPA not suspend your registration for non-compliance with the DCI. EPA has determined that, as a general policy, it will not suspend the registration of a product when the registrant has in good faith sought and continues to seek to enter into a data development/cost sharing program, but the other registrants developing the data have refused to accept its offer. [If your offer is accepted, you may qualify for Option 2 above by entering into an agreement to supply the data.]

In order to qualify for this method, you must:

1. File with EPA a completed "Certification of Attempt to Enter into an Agreement with other Registrants for Development of Data" (EPA Form 8580-6, enclosed).

2. Provide us with a copy of your offer to the other

registrant and proof of the other registrant's receipt of your offer (such as a certified mail receipt). Your offer must, at a minimum, contain the following language or its equivalent:

> [Your company name] offers to share in the burden of producing the data required pursuant to FIFRA sec. 3(c)(2)(B) in the [name of active ingredient] Registration Standard upon terms to be agreed or failing agreement to be bound by binding arbitration as provided by FIFRA section 3(c)(2)(B)(iii).

The remainder of your offer may not in any way attempt to limit this commitment. If the other registrant to whom your offer is made does not accept your offer, and if the other registrant informs us on a DCI Summary Sheet that he will develop and submit the data required under the DCI, then you may qualify for this option. In order for you to avoid suspension under this method, you may not later withdraw or limit your offer to share in the burden of developing the data.

In addition, the other registrant must fulfill its commitment to develop and submit the data as required by this Notice in a timely manner. If the other registrant fails to develop the data or for some other reason would be subject to suspension, your registration as well as that of the other registrant will normally be subject to initiation of suspension proceedings, unless you commit to submit and submit the required data in the specified timeframe. In such cases, the Agency generally will not grant a time extension for submitting the data.

4. You request a waiver of the data requirement. If you believe that a data requirement does not (or should not) apply to your product or its uses, you must provide EPA with a statement of the reasons why you believe this is so. Your statement must address the specific composition or use factors that lead you to believe that a requirement does not apply. Since the Agency has carefully considered the composition and uses of pesticide products in determining that a data requirement applies, EPA does not anticipate that many waivers will be granted. A request for waiver does not extend the timeframes for developing required data, and if your waiver request is denied, your registration may be suspended if you fail to submit the data.

5. You request that EPA amend your registration by deleting the uses for which the data are needed. You are not required to submit data for uses which are no longer on your label.

6. You request voluntary cancellation of the registration of your product(s) for which the data are needed.

E. Testing Protocols, Standards for Conducting Acceptable Tests, Guidance on Evaluating and Reporting Data.

All studies required under this Notice must be conducted in accordance with test standards outlined in the Pesticide Assessment Guidelines, unless other protocol or standards are approved for use by the Agency in writing.

As noted herein, these EPA Guidelines, which are referenced in the Data Tables, are available from the National Technical Information Service (NTIS), Attn: Order Desk, 5285 Port Royal Road, Springfield, VA 22161 (tel: 703-487-4650).

Protocols approved by the Organization for Economic Cooperation and Development (OECD) are also acceptable if the OECD-recommended test standards conform to those specified in the Pesticide Data Requirements regulation (Part 158.70). Please note, however, that certain OECD standards (such as test duration, selection of test species, and degradate identification which are environmental fate requirements) are less restrictive than those in the EPA Assessment Guidelines listed above. When using the OECD protocols, they should be be modified as appropriate so that the data generated by the study will satisfy the requirements of Part 158. Normally, the Agency will not extend deadlines for complying with data requirements when the studies were not conducted in accord with acceptable standards. The OECD protocols are available from OECD, 1750 Pennsylvania Avenue, N.W., Washington, D.C. 20006.

F. Procedures for requesting a change in testing protocol.

If you will generate the required data and plan to use test procedures which deviate from EPA's Pesticide Assessment Guidelines or the Reports of Expert Groups to the Chemicals Group, Organization for Economic Cooperation and Development (OECD) Chemicals Testing Programme, you must submit for EPA approval the protocols you propose to use.

You should submit your protocols before beginning testing, because the Agency will not ordinarily accept as sufficient studies using unapproved protocols. A request for protocol approval will not extend the timeframe for submission of the data, nor will extensions generally be given to conduct studies due to submittal of inappropriate protocols.

G. Procedures for requesting extensions of time.

If you think that you will need more time to generate the data than is allowed by EPA's schedule, you may submit a request for an extension of time. Any request for a time extension which is made as an initial response to a section 3(c)(2)(B) request notice must be submitted in writing to the Product Manager listed at the end of this section and must be made by the 90-day deadline for response. Once dates have been committed to and EPA has accepted these commitments, any subsequent requests for a time extension must be submitted in writing to the Office of Compliance Monitoring at the address given in Section IX.E.

EPA will view failure to request an extension before the data submission response deadline as a waiver of any future claim that there was insufficient time to submit the data. While EPA considers your request, you must strive to meet the deadline for submitting the data.

The extension request should state the reasons why you believe that an extension is necessary and the steps you have taken to meet the testing deadline. Time extensions normally will not be granted due to problems with laboratory capacity or adequacy of funding, since the Agency believes that with proper planning these can be overcome.

A request for an extension does not extend the timeframe for submission of the data. If EPA denies your request for a time extension and you do not submit the data as requested, EPA may begin proceedings to suspend the registrations of your products.

H. PR Notice 86-5 and Any Other Requirements Referenced or Included Within this Notice.

All data submitted in response to this Notice must comply with EPA requirements regarding the reporting of data, including the manner of reporting, the completeness of results, and the adequacy of any required supporting (or raw) data, including, but not limited to, requirements referenced or included in this Notice or contained in PR Notice 86-5 (issued July 29, 1986).

I. Existing stocks provision upon suspension or cancellation.

The Agency has determined that if a registration is suspended for failure to respond to a DCI request under FIFRA sec. 3(c)(2)(B), an existing stocks provision is not consistent with the Act. Accordingly, the Agency does not anticipate granting permission to sell or distribute existing stocks of suspended product except in rare circumstances. If you believe that your product will be suspended or cancelled and that an existing stocks provision should be granted, you have the burden of clearly demonstrating to EPA that granting such permission would be consistent with the Act. The following information must be included in any request for an existing stocks provision:

1. Explanation of why an existing stocks provision is necessary, including a statement of the quantity of existing stocks and your estimate of the time required for their sale or distribution; and

2. Demonstration that such a provision would be consistent with the provisions of FIFRA.

VII. REQUIREMENT FOR SUBMISSION OF PRODUCT-SPECIFIC DATA

Under its DCI authority, EPA has determined that certain product-specific data are required to maintain your registrations in effect. Product-specific data are derived from testing using a specific formulated product, and, unlike generic data, generally support only the registration of that product. All such data must be submitted by the dates specified in this Registration Standard.

If you have a manufacturing use product, these data are listed in Table B. If you have an end use product, the data are listed in Table C. As noted earlier, the Agency has decided that it will not routinely require product-specific data for end use products at this time. Therefore, Table C may not be contained in this Registration Standard; if there is no Table C, you are not required to submit the data at this time.

In order to comply with the product specific data requirements, you must follow the same procedures as for generic data. See Section VI.D, E, F, and G. You should note, however, that product chemistry data are required for every product, and the only acceptable responses are options VI.D.1. (submit data) or VI.D.6.(cancellation of registration).

Failure to comply with the product-specific data requirements for your products will result in suspension of the product's registration.

VIII. REQUIREMENT FOR SUBMISSION OF REVISED LABELING

FIFRA requires each product to be labeled with accurate, complete and sufficient instructions and precautions, reflecting the Agency's assessment of the data supporting the product and its uses. General labeling requirements are set out in 40 CFR 162.10 (see Appendix II - LABELING and SUMMARY). In addition, labeling requirements specific to products containing this pesticide are specified in Section IV.D of this Registration Standard. Applications submitted in response to this notice must include draft labeling for Agency review.

If you fail to submit revised labeling as required, which complies with 40 CFR 162.10 and the specific instructions in Section IV.D., EPA may seek to cancel or suspend the registration of your product under FIFRA sec. 6.

IX. INSTRUCTIONS FOR SUBMISSION

A. Manufacturing Use Products (MUPs) containing the subject pesticide as sole active ingredient.

1. Within 90 days from receipt of this document, you must submit to the Product Manager in the Registration Division for each product subject to this Registration Standard:

   a. The "FIFRA Section 3(c)(2)(B) Summary Sheet" (EPA Form 8580-1), with appropriate attachments.[5]

   b. Confidential Statement of Formula (EPA Form 8570-4).

   c. Formulator's Exemption Statement (EPA Form 8570-27), if applicable.

   d. Evidence of compliance with data compensation requirements of FIFRA sec. 3(c)(1)(D). Refer to 40 CFR 152.80-152.99.

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[5] If on the Summary Sheet, you commit to develop the data, present arguments that a data requirement is not applicable or should be waived, or submit protocols or modified protocols for Agency review, you must submit a copy of the Summary Sheet (and any supporting information) to the Office of Compliance Monitoring, which will be monitoring the data generated in response to this notice. This submission is in addition to responding to the Product Manager, and should be submitted to the Office of Compliance Monitoring at the address given at the end of this section. (Actual studies are not to be submitted to the Office of Compliance Monitoring.)

2. Within 12 months after receipt of this document you must submit to the Product Manager:

a. Application for Pesticide Registration (EPA Form 8570-1).

b. Two copies of any required product-specific data (See Table B).

c. Three copies of draft labeling, including the container label and any associated supplemental labeling. Labeling should be either typewritten text on 8-1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8-1/2 x 11 files. The draft label must indicate the intended colors of the final label, clear indication of the front panel of the label, and the intended type sizes of the text.

d. Product Specific Data Report (EPA Form 8580-4).

3. Within the times set forth in Table A, you must submit to the Registration Division all generic data, unless you are eligible for the formulator's exemption. If for any reason any test is delayed or aborted so that the schedule cannot be met, immediately notify the Product Manager and the Office of Compliance Monitoring of the problem, the reasons for the problem, and your proposed course of action.

B. Manufacturing Use Products containing the subject pesticide in combination with other active ingredients.

1. Within 90 days from receipt of this document, you must submit to the Product Manager in the Registration Division:

a. FIFRA sec. 3(c)(2)(B) Summary Sheet, with appropriate attachments[5] (EPA Form 8580-1).

b. Confidential Statement of Formula (EPA Form 8570-4)

c. Formulator's Exemption Statement (EPA Form 8570-27), if applicable.

2. Within 12 months afrer receipt of this document, you must submit to the Product Manager:

Three copies of draft labeling, including the container label and any associated supplemental labeling. Labeling should be either typewritten text on 8-1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8-1/2 x 11 files. The draft label must indicate the intended colors of the final label, clear indication of the front panel of the label, and the intended type sizes of the text.

3. Within the time frames set forth in Table A, you must submit to the Registration Division all generic data, unless you are eligible for the formulator's exemption. If for any reason any test is delayed or aborted so that the schedule cannot be met, immediately notify the Product Manager and the Office of Compliance Monitoring of the problem, the reasons for the problem, and your proposed course of action.

C. End Use Products containing the subject pesticide as sole active ingredient.

1. Within 90 days from receipt of this document, you must submit to the Product Manager in the Registration Division:

a. FIFRA Section 3(c)(2)(B) Summary Sheet, with appropriate attachments[5] (EPA Form 8580-1).

b. Confidential Statement of Formula (EPA Form 8570-4).

c. Formulator's Exemption Statement (EPA Form 8570-27), if applicable.

2. Within 12 months after receipt of this document you must submit to the Product Manager:

a. Two copies of any product-specific data, if required by Table C.

b. Product Specific Data Report (EPA Form 8580-4), if Table C lists required product-specific data.

c. Three copies of draft labeling, including the container label and any associated supplemental labeling. Labeling should be either typewritten text on 8-1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8-1/2 x 11 files. The draft labeling must indicate the intended colors of the final label, clear indication of the front panel of the label, and the intended type sizes of the text. End use product labeling must comply specifically with the instructions in Section IV (Regulatory Position and Rationale).

D. End Use Products containing the subject active ingredient as one of multiple active ingredients

Within 12 months after the receipt of this document, you must submit to the Product Manager:

Three copies of draft labeling, including the container label and any associated supplemental labeling. Labeling should be either typewritten text on 8-1/2 x 11 inch paper or a mockup of the labeling suitable for storage in 8-1/2 x 11 files. The draft labeling must indicate the intended colors of the final label, clear indication of the front panel of the label, and the intended type sizes of the text. End use product labeling must comply specifically with the instructions in Section IV (Regulatory Position and Rationale).

E. Intrastate Products containing the subject pesticide either as sole active ingredient or in combination with other active ingredients.

Applications for full Federal registration of intrastate products are required to be submitted no later than July 13, 1988.

F. Addresses

The required information must be submitted to the following address:

Richard F. Mountfort, Product Manager 23
Registration Division (TS-767C)
Office of Pesticide Programs
Environmental Protection Agency
401 M St., SW
Washington, D.C. 20460

The address for submissions to the Office of Compliance Monitoring is:

Laboratory Data Integrity Program
Office of Compliance Monitoring (EN-342)
Environmental Protection Agency
401 M St., SW
Washington, D.C. 20460.

APPENDIX I

DATA APPENDICES

GUIDE TO TABLES

Tables A, B, and C contain listings of data requirements for the pesticides covered by this Registration Standard.

Table A contains generic data requirements that apply to the pesticide in all products, including data requirements for which a "typical formulation" is the test substance.

Table B contains product-specific data requirements that apply only to a manufacturing use product.

Table C contains product-specific data requirements that apply only to an end use product.

The data tables are generally organized according to the following format:

1. Data Requirement (Column 1). The data requirements are listed in the order in which they appear in 40 CFR Part 158. The reference numbers accompanying each test refer to the test protocols set out in the Pesticide Assessment Guidelines, which are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.

2. Test Substance (Column 2). This column lists the composition of the test substance required to be used for the test, as follows:

TGAI = Technical grade of the active ingredient
PAI = Pure active ingredient
PAIRA = Pure active ingredient, radio labeled
TEP = Typical end use formulation
MP = Manufacturing use product
EP = End use product

Any other test substances, such as metabolites, will be specifically named in Column 2 or in footnotes to the table.

3. Use pattern (Column 3). This column indicates the use patterns to which the data requirement applies. Use patterns are the same as those given in 40 CFR Part 158. The following letter designations are used for the given use patterns:

A = Terrestrial, food
B = Terrestrial, non-food
C = Aquatic, food
D = Aquatic, non-food
E = Greenhouse, food
F = Greenhouse, non-food
G = Forestry
H = Domestic outdoor
I = Indoor

Any other designations will be defined in a footnote to the table.

4. Does EPA have data? (Column 4). This column indicates one of three answers:

YES - EPA has data in its files that satisfy this data requirement. These data may be cited by other registrants in accordance with data compensation requirements of Part 152, Subpart E.

PARTIALLY - EPA has some data in its files, but such data do not fully satisfy the data requirement. In some cases, the Agency may possess data on one of two required species, or may possess data on one test substance but not all. The term may also indicate that the data available to EPA are incomplete. In this case, when the data are clarified, or additional details of the testing submitted by the original data submitter, the data may be determined to be acceptable. If this is the case, a footnote to the table will usually say so.

NO - EPA either possesses no data which are sufficient to fulfill the data requirement, or the data which EPA does possess are flawed scientifically in a manner that cannot be remedied by clarification or additional information.

5. Bibliographic citation (Column 5). If the Agency has acceptable data in its files, this column lists the identifying number of each study. This normally is the Master Record Identification (MRID) number, but may be a GS number if no MRID number has been assigned. Refer to the Bibliography Appendices for a complete citation of the study.

6. Must additional data be submitted? (Column 6). This column indicates whether the data must be submitted to the Agency. If column 3 indicates that the Agency already has data, this column will usually indicate NO. If column 3 indicates that the Agency has only partial data or no data, this column will usually indicate YES. In some cases, even though the Agency does not have the data, EPA will not require its submission because of the unique characteristics of the chemical; because data on another chemical can be used to fulfill the data requirement; or because the data requirement has been waived or reserved. Any such unusual situations will be explained in a footnote to the table.

7. Timeframe for submission (Column 7). If column 5 requires that data be submitted, this column indicates when the data are to be submitted, based on the issuance date of the Registration Standard. The timeframes are those established either as a result of a previous Data Call-In letter, or standardized timeframes established by PR Notice 85-5 (August 22, 1985).

8. Footnotes (at the end of each table). Self-explanatory.

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA

Data Requirement	Test Substance[1]/	Does EPA Have Data?	Bibliographic Citation[2]/	Must Additional Data Be Submitted?	Timeframe for Submission
§158.120 Product Chemistry					
Product Identity and Composition					
61-2 - Description of Beginning Materials and Manufacturing Process	TGAI	No		Yes[3]/	6 months [4]/
61-3 - Discussion of Formation of Impurities	TGAI	No		Yes[5]/	6 months [4]/
Analysis and Certification of Product Ingredients					
62-1 - Preliminary Analysis	TGAI	No		Yes[6]/	12 Months [4]/
Physical and Chemical Characteristics					
63-2 - Color	TGAI	No		Yes[7]/	6 Months
63-3 - Physical State	TGAI	No		Yes[7]/[8]/	6 Months
63-4 - Odor	TGAI	No		Yes[7]/,[9]/	6 Months
63-5 - Melting Point	TGAI	No		Yes[7]/,[9]/	6 Months
63-6 - Boiling Point	TGAI	No		Yes[7]/	6 Months
63-7 - Density, Bulk Density, or Specific Gravity	TGAI	No		Yes[7]/	6 Months

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Data Requirement	Test Substance[1/]	Does EPA Have Data?	Bibliographic Citation[2/]	Must Additional Data Be Submitted?	Timeframe for Submission
§158.120 Product Chemistry					
Physical and Chemical Characteristics (cont'd)					
63-8 - Solubility	TGAI or PAI	No		Yes[7/]	6 Months
63-9 - Vapor Pressure	TGAI or PAI	No		Yes[7/]	6 Months
63-10 - Dissociation Constant	TGAI or PAI	No		Yes[7/]	6 Months
63-11 - Octanol/Water Partition Coefficient	PAI	No		Yes[7/],[10/]	6 Months
63-12 - pH	TGAI	No		Yes[7/],[11/]	6 Months
63-13 - Stability	TGAI	No		Yes[7/]	15 Months
63-17 - Storage Stability	PAI or TEP	Yes			
Other Requirements:					
64-1 - Submittal of Samples	N/A	N/A		No	

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Footnotes:

1/ Test Substance: TGAI = Technical Grade of the Active Ingredient; PAI = Pure Active Ingredient.

2/ Not applicable. Although product chemistry data may have been submitted in the past, the Agency has determined that these data must be resubmitted for each pesticide. New requirements have been introduced and previously submitted data must be updated. Therefore, bibliographic citations for the old data are not applicable.

3/ Complete information must be provided regarding the nature of the process (batch or continuous), the relative amounts of beginning materials and the order in which they are added, the chemical equations for each intended reaction, equipment used to produce each intermediate and the final product, reaction conditions, the duration of each step of the process, purification procedures, and quality control measures. In addition, the name and address of the manufacturer, producer, or supplier of each beginning material must be provided, along with information regarding the properties of each beginning material used to manufacture each product. In order to assess the potential for contamination with halogenated dibenzo-p-dioxins or dibenzofurans, the description of the manufacturing process must also include the range of temperature conditions, pressure, and pH at each reaction step. Refer to the data requirements set forth in the Agency's June, 1987 Data Call-In Notice for analytical chemistry data on halogenated dibenzo-p-dioxins/dibenzofurans in DCPA.

4/ Timeframes for submitting data required in the Agency's June, 1987 for analytical chemistry data on halogenated dibenzo-p-dioxins and dibenzofurnans in DCPA are specified that Notice.

5/ A detailed discussion of all impurities that are or may be present at ≥ 0.1%, based on knowledge of the beginning materials, chemical reactions (intended and side), in the manufacturing process, and any contamination during and after production must be submitted. This discussion must also address the possible formation of halogenated dibenzo-p-dioxins or dibenzofurans in DCPA, as required in the Agency's June, 1987 Data Call-in Noice.

6/ Five or more representative samples must be analyzed for the amount of active ingredient and each impurity for which a certified limit is required. Complete validation data (accuracy, precision) must be submitted for each analytical method used.

7/ Physicochemical characteristics (color, physical state, odor, melting point, boiling point, specific gravity, solubility, vapor pressure, dissociation constant, K_{ow}, pH, and stability) as required in 40 CFR 158.120 and more fully described in the Pesticide Assessment Guidelines, Subdivision D, must be submitted.

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Footnotes (cont'd):

8/ Data needed if the technical chemical is a liquid at room temperature.

9/ Data needed if the technical chemical is a solid at room temperature.

10/ Required if the technical chemical is organic and nonpolar.

11/ Required if the test substance is dispersible with water.

N/A = Not applicable.

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA

Data Requirement	Test Substance1/	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted?	Timeframe for Submission2/
§158.125 Residue Chemistry					
171-2 - Product Identity3/					
171-4 - Nature of Residue (Metabolism)					
- Plants	PAIRA	Partially	00058377 00114677 40259101	Yes4/	18 Months
- Livestock	PAIRA	Partially	00057629	Yes5/	18 Months
171-4 - Residue Analytical Method					
- Plant Residues	TGAI and Metabolites	Partially	00010026 00114642 00114643 00114644 00114654 00121864 00123748 40259001	Yes6/	33 Months
- Animal Residues	TGAI and Metabolites	Partially	00058378 00114643	Reserved7/	
171-4 - Storage Stability Data	PAI or TEP and Metabolites	Yes	00121864	Yes8/,9/	33 Months

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Data Requirement	Test Substance[1/]	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted?	Timeframe for Submission[2/]
§158.125 Residue Chemistry					
171-4 - Magnitude of the Residue					
- Crop Field Trials					
- Crop Group #1 - Root and Tuber Vegetables [10/]					
1. Horseradish	TEP	Yes	00058377	No	
2. Potatoes	TEP	Partially	00018299 00090259 00114678	Yes[11/]	36 Months
3. Radishes	TEP	Yes	00121864	No	
4. Rutabagas	TEP	Yes	40240801	No	
5. Sweet Potatoes	TEP	Yes	00090259 00114678 00114681	No	
6. Turnips	TEP	Yes	00090259	No	
7. Yams	TEP	No		No[32/]	
- Crop Group #2 - Leaves of Root and Tuber Vegetables[12/]					
1. Radish Tops	TEP	Yes	00121864	No	
2. Turnip Tops	TEP	Yes	00090259	No	

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Data Requirement	Test Substance[1]	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted?	Timeframe for Submission[2]
§158.125 Residue Chemistry					
171-4 - Magnitude of the Residue					
- Crop Field Trials (cont'd)					
- Crop Group #3 - Bulb Vegetables [13]					
1. Garlic	TEP	Yes	00090259 00130562	No	
2. Onions	TEP	Yes	00090259 00114631 00114681	No	
- Crop Group #4 - Leafy Vegetables [14]					
1. Cress, Upland	TEP	Yes	00033087 00090259	No	
2. Lettuce	TEP	Yes	00033087 00090259	No	
- Crop Group #5 - Brassica Leafy Vegetables					
1. Broccoli	TEP	Yes	00090259 00114681	No	
2. Brussels sprouts	TEP	Yes	00090259	No	
3. Cabbage	TEP	Yes	00090259 00114680	No	
4. Cauliflower	TEP	Yes	00090259 00114681	No	

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Data Requirement	Test Substance1/	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted?	Timeframe for Submission2/
§158.125 Residue Chemistry					
171-4 - Magnitude of the Residue					
- Crop Field Trials (cont'd)					
5. Collards	TEP	Yes	00090259	No	
6. Kale	TEP	Yes	00090259	No	
7. Mustard Greens	TEP	Yes	00090259	No	
- Crop Group #6 - Legume Vegetables 15/					
1. Beans (Succulent and Dried)	TEP	Partially	00017975 00058377 00090259 00114678	Yes16/	36 Months
2. Soybeans	TEP	Partially	00017975 00058377 00090259 00114678	Yes17/	36 Months
- Crop Group #7 - Fruiting Vegetables (Except Cucurbits) 18/					
1. Eggplant	TEP	Partially	00090259	Yes	36 Months
2. Peppers	TEP	Partially	00090259 00114680	Yes19/	36 Months

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Data Requirement	Test Substance1/	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted?	Timeframe for Submission2/
§158.125 Residue Chemistry					
171-4 - Magnitude of the Residue					
- Crop Field Trials (cont'd)					
3. Tomatoes	TEP	Partially	00090259 00114679 00114680	Yes 20/	36 Months
- Crop Group #8 - Cucurbit Vegetables 21/					
1. Cucumbers	TEP	Partially	00090259	Yes22/	36 Months
2. Melons	TEP	Partially	00090259	Yes23/	36 Months
3. Squash, summer	TEP	Partially	00090259	Yes	36 Months
4. Squash, winter	TEP	Partially	00090259	Yes	36 Months
5. Watermelon	TEP	Partially	00090259	Yes	36 Months
- Crop Group #9 - Small Fruits and Berries 24/					
o Strawberries	TEP	Partially	00090259	Yes25/	36 Months
- Crop Group #10 - Cereal Grains 26/					
o Corn, Field and Sweet	TEP	Partially	00072099	Yes27/	36 Months
- Crop Group #11 - Forage, Fodder, and Straw of Cereal Grains 28/					
o Corn Forage and Fodder	TEP	Partially	00072099	Yes29/	36 Months

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Data Requirement	Test Substance1/	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted?	Timeframe for Submission2/
§158.125 Residue Chemistry					
171-4 - Magnitude of the Residue					
- Crop Field Trials (cont'd)					
- Crop Group #12 - Miscellaneous Commodities					
o Cottonseed	TEP	Partially	00114642 00114678 00114681	Yes30/	36 Months
- Meat/Milk/Poultry/Eggs	TEP	Partially	00038919 00058378 00114643	Reserved31/	

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Footnotes:

1/ Test Substance: TGAI = Technical Grade of the Active Ingredient; PAIRA = Pure Active Ingredient, Radiolabeled; TEP = Typical End-use Product.

2/ Data must be submitted within the indicated timeframe, based on the date of this Guidance Document.

3/ Refer to Product Chemistry Data Requirement tables.

4/ Data must be submitted depicting the uptake, distribution, and metabolism of $[^{14}C]$DCPA in lettuce, turnip, and onion plants harvested after registered preemergence, postemergence, or lay-by applications. Plants must be sampled at regular intervals until maturity to characterize residues. All major components of the terminal residues in mature plant parts must be identified (and confirmatory analytical procedures used to verify identification) and quantitated. If the metabolism of DCPA in these three crops differs significantly, then metabolism data for one representative commodity from each crop group for which registered uses exist will be required. Representative samples from these tests must also be analyzed by enforcement methods to ascertain that these methods are capable of determining all residues of concern.

5/ Metabolism studies utilizing ruminants and poultry. Animals must be dosed for 3 days with ringlabeled $[^{14}C]$DCPA at a level sufficient to make residue identification and quantification possible. Milk and eggs must be collected twice daily during the dosing period. Animals must be sacrificed within 24 hours of the final dosing. The distribution and identity of the residues must be determined in milk, eggs, liver, kidney, muscle, and fat. Samples from the studies requested above should also be analyzed using current enforcement methods to ascertain the validity of these methods for analysis of animal commodities. Upon receipt of the requested data, the need for and nature of tolerances for DCPA residues in animal products will be determined.

6/ Residues of TPA in or on crop samples must be subjected to analysis by multiresidue protocols I-IV available from the National Technical Information Service under Order No. PB 203734/AS. If the required plant metabolism data reveal any additional residues of concern from DCPA, then these metabolites will also have to be subjected to the multiresidue protocols.

7/ Should the required animal metabolism data indicate that registered uses may result in DCPA residues of concern in animal feed items, then residues of concern of DCPA in animal commodities will need to be subjected to analysis by multiresidue protocols I-IV (available from the National Technical Information Service under Order No. PB 203734/AS).

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Footnotes (cont'd):

8/ Storage intervals and conditions must be reported for the samples used to generate residue data submitted in support of the established tolerances for DCPA residues in or on plant commodities. Data must also be provided which depict the decline in residues during the storage intervals and under the conditions reported. In laboratory tests using fortified samples, the pure active ingredient and pure metabolites must be used. However, if field-weathered samples are used, the test substance must be a typical end-use product.

9/ All residue data requested in this Standard must be accompanied by information specifying the storage intervals and conditions for samples analyzed. Data must also be submitted depicting the storage stability of residues of concern in appropriate sample substrates under the storage conditions and time intervals specified. In laboratory tests using fortified samples, the pure active ingredient and pure metabolites must be used. However, if field-weathered samples are used, the test substance must be a typical end-use product.

10/ Use directions must be proposed and appropriate supporting residue data submitted for the additional representative group members carrot and sugar beet.

11/ Data must be submitted depicting the concentration, if any, of residues in chips, granules, and dried potatoes processed from potatoes bearing measurable weathered residues. If the data indicate a potential for residue concentration during processing, appropriate food/feed additive tolerances must be proposed.

12/ Use directions must be proposed, and appropriate supporting residue data submitted for additional representative group member sugar beet tops.

13/ Use directions must be proposed, and appropriate supporting residue data submitted for the additional representative group member green onions.

14/ Use directions must be proposed, and appropriate supporting residue data submitted for the additional representative group members celery and spinach.

15/ Use directions must be proposed, and appropriate supporting residue data submitted for the additional representative group member peas.

16/ Data must be submitted depicting residues of concern of DCPA in bean cannery residue processed from pods bearing measurable weathered residues. If residue concentrations in cannery residue exceed the residue concentration in beans, then an appropriate feed additive tolerance will have to be proposed.

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Footnotes (cont'd):

17/ Data must be submitted depicting residues of concern in grain dust, meal, hulls, soapstock, crude oil, and refined oil processed from soybeans bearing measurable, weathered residues. If residues are found to concentrate in any of these commodities, then appropriate food/feed additive tolerances must be established.

18/ Additional data to support the established tolerances for the combined residues of DCPA and its metabolites MTP and TPA (calculated as DCPA) in or on the representative group members tomatoes and peppers (refer to the tomatoes and peppers sections for details of data requirements).

19/ Data depicting residues of concern of DCPA in or on sweet peppers resulting from lay-by soil application (using ground equipment) of a G formulation (in separate tests) aerial application of a WP formulation at 11 lb ai/A. Tests must be conducted in CA (18%), FL (23%), and TX (16%) which collectively accounted for ca. 60 percent of the 1982 U.S. sweet pepper acreage.

20/ Data must be submitted depicting DCPA residues of concern in or on tomatoes following postemergence broadcast soil application (utilizing aerial equipment) of the 75% WP formulation and, in separate tests, a G formulation (utilizing ground equipment) at 11 lb ai/A. Tests must be conducted in CA (27%) and FL (50%), which collectively produced ca. 77 percent of the 1984 U.S. tomato crop (Agricultural Statistics 1985, p. 172).

Tests must be submitted reflecting DCPA residues of concern in dry pomace, puree, catsup, and juice processed from tomatoes bearing measurable weathered residues. If residues are found to concentrate in any of the abovementioned commodities, appropriate food/feed additive tolerances must be proposed.

21/ Additional data to support the established toerances for combined residues of DCPA and its metabolites MTP and TPA (calculated as DCPA) in or on the representative group members cantaloupe, cucumber, and summer squash (refer to melon, cucumber, and squash sections for details of data requirements).

22/ Data must be submitted depicting DCPA residues of concern in or on mature cucumbers harvested following postemergence broadcast soil application of a G formulation at 11 lb ai/A. Application must be made when plants have four to five true leaves. Tests must be conducted in CA (8%), MI (18%), and NC (14%) since these States represent the major U.S. cucumber-growing regions; production figures obtained from Agricultural Statistics 1985, p. 157, appear in parentheses.

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Footnotes (cont'd):

23/ Data must be submitted depicting DCPA residues of concern in or on mature cantaloupes harvested following postemergence broadcast aerial application to seeded plantings (four to five leaf stage) of the 75% WP formulation at 11 lb ai/A. Tests must be conducted in CA (52%) and TX (21%); these States collectively accounted for 75 percent of 1982 U.S. cantaloupe acreage.

Data must be submitted depicting DCPA residues of concern in or on mature cantaloupes harvested following postemergence broadcast soil application to seeded plantings (four- to five-true-leaf stage) of a G formulation at 11 lb ai/A. Tests must be conducted in CA and TX (see footnote 18).

24/ Additional data to support the established tolerance for residues of DCPA in or on the representative group member strawberries (refer to the Strawberries section for details of data requirements). Use directions must be proposed, and appropriate supporting residue data submitted for additional representative group members (blackberries, blueberries, cranberries, and grapes).

25/ Data must be submitted depicting DCPA residues of concern in or on strawberries following early spring postemergence broadcast soil application of a WP formulation at 11 lb ai/A. Tests must include applications with aerial equipment in 10 gal. of spray suspension/A. Tests must be conducted in CA, which produced 79 percent of 1984 U.S. strawberry crop.

Data must be submitted depicting DCPA residues of concern in or on strawberries harvested following postemergence broadcast soil application of a G formulation at 11 lb ai/A. Tests must be conducted in CA.

26/ Additional data are required to support the established tolerances for residues of DCPA in or on the representative group member corn (refer to the Corn, field and sweet section for details of data requirements).

Use directions must be proposed and appropriate supporting residue data submitted for the additional group members rice, sorghum, and wheat.

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Footnotes (cont'd):

27/ Data must be submitted depicting residues of concern of DCPA in or on sweet corn (including kernel plus cob with husk removed) and corn grain (including field and pop) harvested at maturity after a postemergence directed spray with the 75% WP at 10.5 lb ai/A when corn plants are > 18 inches in height. Tests must be conducted in NC or SC, the only States in which this use is registered.

Data must be submitted depicting DCPA residues of concern in milled products and grain dust from the milling process (from wet millings starch, crude and refined oils and from dry millings, grits, meal, flour, crude and refined oils) processed from field corn grain bearing measurable weathered residues. If residues concentrate during processing in any of these commodities, then appropriate food/feed additive tolerances must be established.

28/ Additional data are required to support the established tolerances for residues of DCPA in or on the representative group member corn (refer to the Corn forage and fodder section for details of data requirements). Use directions must be proposed and appropriate supporting residue data submitted for forage, fodder, and straw of the additional group members wheat and any other cereal grain crop.

29/ Determination must be made of residues of concern of DCPA in or on field corn forage and fodder harvested after a postemergence directed spray of the 75% WP at 10.5 lb ai/A to corn plants > 18 inches in height. Test must be conducted in NC or SC.

30/ Data must be submitted depicting DCPA residues of concern in meal, hulls, crude oil, refined oil, and soapstock processed from cottonseed bearing measurable weathered residues. If residues concentrate in any of these processed commodities, appropriate food/feed additive tolerances must be proposed.

31/ Upon receipt of the data requested in the section "Nature of the Reside in Animals," the need for, and the nature of possible tolerances for DCPA residues in livestock will be assessed. Then the available data will be evaluated as to its adequacy to support tolerances in animal commodities.

32/ Presently, DCPA is not federally registered for use on yams. DCPA is registered for use on sweet potatoes.

TABLE A

GENERIC DATA REQUIREMENTS FOR IMPURITIES OBSERVED IN DCPA

Data Requirement	Test Substance1/	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted?	Timeframe for Submission2/
§158.125 Residue Chemistry					
171-2 Chemical Identity 3/					
171-3 Direction for use		See Index			
171-4 - Nature of the Residue (Metabolism)					
- Plants 4/	Impurities	No		Yes	18 Months
- Livestock	Impurities	No		Reserved	18 Months
171-4 - Residue Analytical Method					
- Plant Residues	Impurities	No		Yes	33 Months
- Animal Residues	Impurities	No		Reserved	
171-4 - Storage Stability Data	Impurities	No		Reserved	
171-4 - Magnitude of the Residue5/,6/,7/,8/					
- Crop Field Trials					
Leafy Vegetables Group					
o Lettuce	TEP	No		Yes9/	36 Months
Brassica Leafy Vegetables Group					
o Broccoli	TEP	No		Yes10/	36 Months

TABLE A

GENERIC DATA REQUIREMENTS FOR IMPURITIES OBSERVED IN DCPA (cont'd)

Data Requirement	Test Substance1/	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted?	Timeframe for Submission2/
§158.125 Residue Chemistry					
171-4 - Magnitude of the Residue5/,6/7/8/ (cont'd)					
- Crop Field Trials (cont'd)					
Legume Vegetables Group					
o Soybeans	TEP	No		Yes11/	36 Months
Fruiting Vegetables Group (Except Cucurbits)					
o Tomatoes	TEP	No		Yes12/13/	36 Months
Small Fruits and Berries Group					
o Strawberries	TEP	No		Yes14/	36 Months
Forage, Fodder, and Straw of the Cereal Grains Group					
o Corn Forage and Fodder	TEP	No		Yes15/	36 Months
Meat/Milk/Poultry/Eggs	TEP	No		Reserved16/	

TABLE A

GENERIC DATA REQUIREMENTS FOR IMPURITIES OBSERVED IN DCPA (cont'd)

Footnotes:

Reserved: Data may be needed pending results of additional residue studies submitted.

1/ Test Substance: TGAI = Technical Grade of the Active Ingredient; PAIRA = Pure Active Ingredient, Radiolabeled; TEP = Typical End-Use Product.

2/ Data must be submitted within the indicated timeframe, based on the date of this Guidance Document.

3/ Refer to Product Chemistry Data Requirement Tables. If dioxins and/or benzofurans are found in technical DCPA the following residue data requirements for HCB may also be extended to these impurities.

4/ Data depicting the uptake, distribution, and metabolism of ^{14}C-HCB in lettuce, turnip, and onion plants harvested after treatments similar to the uses registered for DCPA (pre- and post-emergent and at layby) are required. Plants must be sampled at regular intervals until maturity to characterize residues. These studies should be carried out in conjunction with the required DCPA metabolism studies so that the decline of these two chemicals can be compared. All major components of the terminal residue in mature plant parts must be characterized and quantitated. If the metabolism of HCB in these crops differs significantly, then additional studies on other crops may be required.

5/ Residue data for impurities should reflect application of TEP's containing current production lots of technical DCPA.

6/ If detectable residues of impurities are observed in any of the test crops below, residue data will be required for all crops having established tolerances.

7/ The analytical methodology for the residue studies for HCB on the seven representative commodities must have a limit of quantitation of 1 ppb or better.

8/ Magnitude of residues in each raw agricultural commodity: The Agency intends to confirm the results reported from these studies. Therefore each sample collected for analysis should be split into two samples, one for analysis by the Registrant and one to be stored frozen by the Registrant until requested for analysis by the Agency. The Registrant should take precautions to ensure that the two samples are equivalent, and both samples should be treated and stored carefully to minimize sample integrity problems that may arise on extended storage. The split samples must be clearly labeled, and are not to be submitted to the Agency until specifically requested.

TABLE A

GENERIC DATA REQUIREMENTS FOR IMPURITIES OBSERVED IN DCPA (cont'd)

Footnotes (cont'd):

9/ Residue data on impurities should reflect treatments with appropritate TEP's at the maximum registered use and be carried out in the states of AZ and CA.

10/ Residue data on impurities should reflect treatments with appropriate TEP's at the the maximum registered use and be carried out in CA.

11/ Residue data on impurities should reflect treatments with appropriate TEPs at the maximum registered use and be carried out in the States of AK, IO, MN and OH.

12/ Residue data on impurities should reflect treatments with appropriate TEPs at the maximum registered use and be carried out in the States of CA and FL.

13/ Should detectable residues be observed on tomatoes a processing study employing tomatoes bearing weathered residues of the appropriate impurity will be required.

14/ Residue data on impurities should reflect treatments with appropriate TEP's at the maximum registered use and be carried out in CA.

15/ Residue data on impurities should reflect treatments with appropriate TEP'S at the maximum registered use and be carried out in the States of IL, IO, WI and OH.

16/ Should detectable residues of impurities be observed in feed items, then feeding studies on livestock may be needed.

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA

Data Requirement	Test Substance[1]/	Use Patterns[2]/	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted	Timeframe for Submission [3]/
§158.130 Environmental Fate						
Degradation Studies-Lab:						
161-1 - Hydrolysis	TGAI or PAIRA	A,B	Yes	00114648	No	
Photodegradation						
161-2 - In Water	TGAI or PAIRA	A,B	No		Yes	9 Months
161-3 - On Soil	TGAI or PAIRA	A	No		Yes	9 Months
161-4 - In Air	TGAI or PAIRA		No		No	
Metabolism Studies-Lab:						
162-1 - Aerobic Soil	TGAI or PAIRA	A,B	No		Yes	27 Months
162-2 - Anaerobic Soil	TGAI or PAIRA	A	No		Yes	27 Months
162-3 - Anaerobic Aquatic	TGAI or PAIRA		No		No	
162-4 - Aerobic Aquatic	TGAI or PAIRA		No		No	
Mobility Studies:						
163-1 - Leaching and Adsorption/ Desorption	TGAI or PAIRA	A,B	No		Yes	27 Months
163-2 - Volatility (Lab)	TEP	A	No		Reserved[4]/	

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Data Requirement	Test Substance[1]/	Use Patterns[2]/	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted	Timeframe for Submission[3]/
§158.130 Environmental Fate						
Mobility Studies (cont'd):						
163-3 - Volatility (Field)	TEP	A	No		Reserved[5]/	
Dissipation Studies-Field:						
164-1 - Soil	TEP	A,B	No		Yes	27 Months
164-2 - Aquatic (Sediment)	TEP		No		No	
164-3 - Forestry	TEP		No		No	
164-4 - Combination and Tank Mixes	TEP		No		No	
164-5 - Soil, Long-Term	TEP	A	No		Reserved[6]/	
Accumulation Studies:						
165-1 - Rotational Crops (Confined)	PAIRA	A,B	No		Yes	39 Months
165-2 - Rotational Crops (Field)	TEP	A,B	No		Reserved[7]/	
165-3 - Irrigated Crops	TEP		No		No	
165-4 - In Fish	TGAI or PAIRA	A,B	No		Yes	12 Months
165-5 - In Aquatic Nontarget Organisms	TEP		No		No	

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Data Requirement	Test Substance[1]/	Use Patterns[2]/	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted	Timeframe for Submission[3]/
Environmental Fate, continued						
Groundwater Studies						
- Groundwater Monitoring	TEP	A,B	No		Yes[8]/	27 Months
§158.140 Reentry Protection						
Subpart K - Reentry						
132-1 - Foliar Dissipation	TEP	A,H	No		Yes[9]/	27 Months
132-2 - Soil Dissipation	TEP	A	No		No	
133-3 - Dermal Exposure	TEP	A,H	No		Conditional[10]/	
133-4 - Inhalation Exposure	TEP	A	No		Conditional[10]/	

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Footnotes:

1/ Test Substance: TGAI = Technical Grade of the Active Ingredient; PAIRA = Pure Active Ingredient, Radiolabeled; TEP = Typical End-Use Product.

2/ Use paterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Nonfood crop; C = Aquatic, Food Crop; D = Aquatic, Nonfood crop; E = Greenhouse, Food crop; F = Greenhouse, Nonfood; G = Forestry; H = Domestic, Outdoor; I = Indoor.

3/ Data for individual studies must be submitted no later than the dates listed below.

4/ Pending toxicology considerations.

5/ Required if laboratory results show reason for concern.

6/ Required if pesticide residues do not readily dissipate in soil.

7/ Required if confined studies show accumulation in rotational crops.

8/ Ground water monitoring protocol must be submitted, reviewed, and approved prior to conducting study.

9/ For crop tests, it will be sufficient to submit foliar dislodgeable residue dissipation data for only one of the following crops: collards, kale, mustard greens, or turnip greens. The field test(s) must be run in an arid environment such as a California inland valley. If the Registrant chooses, additional data may be submitted from other, more-humid environments where residue dissipation may be faster. For home lawns, grass foliar dislodgeable residue data must also be submitted, but the location of this test is not critical. The dislodgeable residue levels that must be measured are HCB, 2,3,7,8-TCDD and DCPA.

10/ Human-exposure monitoring data may be submitted at the Registrant's option. If dermal exposure data are submitted, inhalation exposure data must also be submitted. If human exposure monitoring data are submitted, the data submitted should be limited to foliar dislodgeable residues on treated crop leaves and on treated grass leaves. These data may be used in conjunction with foliar dislodgeable and soil residue data for setting an appropriate reentry interval.

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA

Data Requirement	Test Substance[1]/	Use Patterns[2]/	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted	Timeframe for Submission[3]/
§158.135 Toxicology						
Acute Testing:						
81-1 - Acute Oral Toxicity - Rat	TGAI	A,B,H	No		Yes	9 Months
81-2 - Acute Dermal Toxicity - Rabbit	TGAI	A,B,H	No		Yes	9 Months
81-3 - Acute Inhalation Toxicity - Rat	TGAI	A,B,H	No		Yes	9 Months
81-4 - Eye Irritation	TGAI	A,B,H	No		Yes	9 Months
81-5 - Dermal Irritation - Rabbit	TGAI	A,B,H	No		Yes	9 Months
81-6 - Dermal Sensitization - Guinea Pig	TGAI	A,B,H	Yes	00150207	No	
81-7 - Delayed Neurotoxicity - Hen	TGAI		No		No[4]/	
Subchronic Testing:						
82-1 - 90-Day Feeding - Rodent	TGAI	A,B,H	No		Yes[5]/	15 Months
- Nonrodent (Dog)	TGAI	A,B,H	No		No[5]/	

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Data Requirement	Test Substance1/	Use Patterns2/	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted	Timeframe for Submission 3/
§158.135 Toxicology						
Subchronic Testing (cont'd):						
82-2 - 21-Day Dermal - Rat	TGAI	A,B,H	No		Yes6/	12 Months
82-3 - 90-Day Dermal - Rabbit	TGAI		No		No7/	
82-4 - 90-Day Inhalation - Rat	TGAI		No		No8/	
82-5 - 90-Day Neurotoxicity - Hen	TGAI		No		No9/	
Chronic Testing:						
83-1 - Chronic Toxicity - Rodent	TGAI	A	No		Yes	50 Months
- Nonrodent (Dog)	TGAI	A	Yes	00083584	No	
83-2 - Oncogenicity - Rat (preferred)	TGAI	A	No		Yes	50 Months
- Mouse (preferred)	TGAI	A	No		Yes	50 Months
83-3 - Teratogenicity - Rat	TGAI	A	Yes	00160685	No	
- Rabbit	TGAI	A	No		Yes	15 Months

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Data Requirement	Test Substance[1/]	Use Patterns[2/]	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted	Timeframe for Submission [3/]
§158.135 Toxicology						
Chronic Testing (cont'd):						
83-4 - Reproduction - Rat 2-Generation	TGAI	A	No		Yes	50 Months
Mutagenicity Testing						
84-2 - Gene Mutation (Ames Test)	TGAI	A,B,H	Yes	00100775	No	
84-2 - Structural Chromosomal Aberration	TGAI	A,B,H	No		Yes	12 Months
84-4 - Other Genotoxic Effects	TGAI	A,B,H	No		Yes	12 Months
Special Testing						
85-1 - General Metabolism	PAI or PAIRA	A,B,H	No		Yes	24 Months
85-3 - Dermal Absorption -Rat	PAIRA	A,B,H	No		Reserved[10/]	

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Footnotes:

1/ Test Substance = TGAI - Technical Grade of the Active Ingredient; PAI = Pure Active Ingredient; PAIRA = Pure Active Ingredient, Radiolabeled; Choice = Choice of several test substances determined on a case-by-case basis.

2/ The use patterns are as follows: A = Terrestrial, Food Crop; B = Terrestrial, Nonfood Crop; C = Aquatic, Food Crop; D = Aquatic, Nonfood; E = Greenhouse, Food Crop; F = Greenhouse, Nonfood; G = Forestry; H = Domestic, Outdoor; I = Indoor; IP = Industrial Preservative.

3/ Unless otherwise specified, data must be submitted no later than the number of months listed below, from the date of receipt of this Standard.

4/ This test is required for compounds which are organophosphate inhibitors of cholinesterase, or related to such inhibitors or metabolites of such inhibitors. DCPA is not an organophosphate; therefore, a study is not required.

5/ This study will not be required if an acceptable chronic study is submitted.

6/ This study must be performed on the rat.

7/ This study is not required because existing acceptable end-uses should not result in repeated human skin contact.

8/ This study is not required because existing acceptable end-uses should not result in repeated inhalation exposure.

9/ Since an acute neurotoxicity study is not required for this compound and there is no evidence of neurotoxicity in mammalian species, this study is not required.

10/ This study maybe required if the product chemistry and dermal exposure data required by this Standard do not produce an acceptable oncogenic risk when a dermal absorption of 100% is utilized in the risk calculations. If required, the study will follow the dermal adsorption of the impurities, 2,3,7,8-TCDD and/or HCB in DCPA at the combined dermal exposures (mg/cm^2) of DCPA and the impurities that have been found to occur during use.

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA

Data Requirement	Test Substance 1/	Use Patterns 2/	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted	Timeframe for Submission 3/
§158.145 Wildlife and Aquatic Organisms						
Avian and Mammalian Testing						
71-1 - Acute Avian Oral Toxicity	TGAI	A,B	No		Yes	9 Months
71-2 - Avian Subacute Dietary Toxicity						
- Upland Game Bird and	TGAI	A,B	No		Yes	9 Months
- Waterfowl	TGAI	A,B	No		Yes	9 Months
71-3 - Wild Mammal Toxicity	TGAI	A,B	No		No 4/	
71-4 - Avian Reproduction						
- Upland Game Bird	TGAI	A,B	No		No 5/	
- Waterfowl	TGAI	A,B	No		No 5/	
71-5 - Simulated Field Testing						
- Mammals	TEP	A,B	No		No 6/	
- Birds	TEP	A,B	No		No 6/	
- Actual Field Testing						
- Mammals	TEP	A,B	No		No 6/	
- Birds	TEP	A,B	No		No 6/	

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Data Requirement	Test Substance[1]/	Use Patterns[2]/	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted	Timeframe for Submission[3]/
§158.145 Wildlife and Aquatic Organisms (cont'd)						
Aquatic Organisms Testing						
72-1 - Freshwater Fish Toxicity						
- Coldwater Fish Species	TGAI	A,B	No		Yes	9 Months
- Warmwater Fish Species	TGAI, TEP	A,B	No		Yes	9 Months
72-2 - Acute Toxicity to Freshwater Invertebrates	TGAI, TEP	A,B	Yes	40098001	No	
72-3 - Acute Toxicity to Estuarine and Marine Organisms						
- Fish	TGAI	A,B	Yes	40228401	No	
- Mollusk	TGAI	A,B	Yes	40228401	No	
- Shrimp	TGAI	A,B	Yes	40228401	No	
72-4 - Fish Early Life Stage	TGAI	A,B	No		No[5]/	
- Aquatic Invertebrate Life Cycle	TGAI	A,B	No		No[5]/	
72-5 - Fish Life Cycle	TGAI	A,B	No		No[5]/	

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Data Requirement	Test Substance[1]	Use Patterns[2]	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted	Timeframe for Submission [3]
§158.145 Wildlife and Aquatic Organisms (cont'd)						
Aquatic Organisms Testing						
72-6 - Aquatic Organism Accumulation	TGAI, PAI, or Degradation Product					
- Crustacean		A,B	No		No[5]	
- Fish		A,B	No		No[5]	
- Insect Nymph		A,B	No		No[5]	
- Mollusk		A,B	No		No[5]	
72-7 - Simulated Field Testing - Aquatic Organisms	TEP	A,B	No		No[7]	
- Actual Field Testing - Aquatic Organisms	TEP	A,B	No		No[7]	

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Footnotes:

1/ Test Substance: TGAI - Technical Grade of the Active Ingredient; PAI = Pure Active Ingredient; TEP = Typical End-Use Product.

2/ The use patterns are as follows: A = Terrestrial, Food Crop; B = Terrestrial, Nonfood Crop; C = Aquatic, Food Crop; D = Aquatic, Nonfood Crop; E = Greenhouse, Food Crop; F = Greenhouse, Nonfood Crop; G = Forestry; H = Domestic. Outdoor: I = Indoor.

3/ No data requirement for formulated products, Unless otherwise specified, data must be submitted no later than the number of months listed below, from the date of reciept of this Standard.

4/ Available information indicate DCPA is low in toxicity to mammals and its use pattern will not cause adverse effects to wild mammals.

5/ Not applicable for purposes of this Standard.

6/ These data are required if available information indicate an acute hazard. Available information do not trigger this requirement.

7/ These studies are required if available acute toxicity data on aquatic organisms indicate an acute hazard. Available data do not trigger these requirements.

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA

Data Requirement	Test Substance[1]	Use Patterns[2]	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted	Timeframe for Submission[3]
§158.150 Plant Protection						
121-1 - Target Area Phytotoxicity	TEP	A,B	No		No[3]	
Nontarget Area Phytotoxicity						
Tier I						
122-1 - Seed Germination/ Seedling Emergence	TGAI	A,B	No		Yes	9 Months
122-1 - Vegetative Vigor	TGAI	A,B	No		Yes	9 Months
122-2 - Aquatic Plant Growth	TGAI	A,B	No		Yes	9 Months
Tier II						
123-1 - Seed Germination/ Seedling Emergence	TGAI	A,B	No		Reserved[4]	
123-1 - Vegetative Vigor	TGAI	A,B	No		Reserved[4]	
123-2 - Aquatic Plant Growth	TGAI	A,B	No		Reserved[4]	
Tier III						
124-1 - Terrestrial Field	TEP	A,B	No		Reserved[5]	
124-2 - Aquatic Field	TEP	A,B	No		Reserved[5]	

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA

Data Requirement	Test Substance1/	Use Pattern2/	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted	Timeframe for Submission3/
§158.155 Nontarget Insect						
Nontarget Insect Testing - Pollinators:						
141-1 - Honey Bee Acute Contact Toxicity	TGAI	A,B	Yes	00018842	No	
141-2 - Honey Bee - Toxicity of Residues on Foliage	TEP	A,B	No		No4/	
141-4 - Honey Bee Subacute Feeding Study	(Reserved)5/					
141-5 - Field Testing for Pollinators	TEP	A,B	No		No4/	
Nontarget Insect Testing - Aquatic Insects:						
142-1 - Acute Toxicity to Aquatic Insects	(Reserved)6/					
142-2 - Aquatic Insect Life Cycle Study	(Reserved)6/					
142-3 - Simulated or Actual Field Testing for Aquatic Insects	(Reserved)6/					

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Data Requirement	Test Substance[1]	Use Pattern[2]	Does EPA Have Data?	Bibliographic Citation	Must Additional Data Be Submitted[3]	Timeframe for Submission
§158.155 Nontarget Insect (cont'd)						
143-1 - Nontarget Insect thru Testing - Predators 143-3 - and Parasites	(Reserved)[6]					

TABLE A

GENERIC DATA REQUIREMENTS FOR DCPA (cont'd)

Footnotes:

1/ Test Substance: TGAI - Technical Grade of the Active Ingredient; TEP = Typical End-Use Product.

2/ The use patterns are as follows: A = Terrestrial, Food Crop; B = Terrestrial, Nonfood Crop; C = Aquatic, Food Crop; D = Aquatic, Nonfood Crop; E = Greenhouse, Food Crop; F = Greenhouse, Nonfood Crop; G = Forestry; H = Domestic, Outdoor; I = Indoor.

3/ Unless otherwise specified, data must be submitted no later than the number of months listed below, from the date of reciept of this Standard.

4/ As data from the acute contact test indicate low toxicity, no further testing is required.

5/ Reserved pending development of test methodology.

6/ Reserved pending Agency decision as to whether the data requirement should be established.

TABLE B

PRODUCT-SPECIFIC DATA REQUIREMENTS FOR DCPA MANUFACTURING-USE PRODUCTS

Data Requirement	Test Substance[1/]	Does EPA Have Data To Satisfy This Requirement?[2/]	Bibliographic Citation[2/]	Must Additional Data Be Submitted Under Section 3(c)(2)(B)?	Timeframe for Data Submission
§158.120 Product Chemistry					
Product Identity and Composition					
61-1 - Product Identity and Disclosure of Ingredients	MP	No		Yes[3/]	6 months[4/]
61-2 - Description of Beginning Materials and Manufacturing Process	MP	No		Yes[5/]	6 months[4/]
61-3 - Discussion of Formation of Impurities	MP	No		Yes[6/]	6 months[4/]
Analysis and Certification of Product Ingredients					
62-1 - Preliminary Analysis of Product Samples	MP	No		Yes[7/]	12 months[4/]
62-2 - Certification of Ingredient Limits	MP	No		Yes[8/]	12 months[4/]
62-3 - Analytical Methods to Verify Certified Limits	MP	No		Yes[9/]	12 months[4/]

TABLE B

PRODUCT-SPECIFIC DATA REQUIREMENTS FOR DCPA MANUFACTURING-USE PRODUCTS (cont'd)

Data Requirement	Test Substance[1]	Does EPA Have Data To Satisfy This Requirement?[2]	Bibliographic Citation[2]	Must Additional Data Be Submitted Under Section 3(c)(2)(B)?	Timeframe for Data Submission
§158.120 Product Chemistry					
Physical and Chemical Characteristics					
63-2 - Color	MP	No		Yes[10]	6 Months
63-3 - Physical State	MP	No		Yes[10]	6 Months
63-4 - Odor	MP	No		Yes[10]	6 Months
63-7 - Density, Bulk Density, or Specific Gravity	MP	No		Yes[10]	6 Months
63-12 - pH	MP	No		Yes[10],[11]	6 Months
63-14 - Oxidizing or Reducing Action	MP	No		Yes[10],[12]	6 Months
63-15 - Flammability	MP	No		Yes[10],[13]	6 Months
63-16 - Explodability	MP	No		Yes[10],[14]	6 Months
63-17 - Storage Stability	MP	No		Yes[10]	15 Months
63-18 - Viscosity	MP	No		Yes[10],[15]	6 Months
63-19 - Miscibility	MP	No		Yes[10],[16]	6 Months
63-20 - Corrosion Characteristics	MP	No		Yes[10]	15 Months

TABLE B

PRODUCT-SPECIFIC DATA REQUIREMENTS FOR DCPA MANUFACTURING-USE PRODUCTS (cont'd)

Data Requirement	Test Substance[1]	Does EPA Have Data To Satisfy This Requirement?[2]	Bibliographic Citation[2]	Must Additional Data Be Submitted Under Section 3(c)(2)(B)?	Timeframe for Data Submission
§158.120 Product Chemistry					
Other Requirements:					
64-1 - Submittal of Samples	MP	No		No	

TABLE B

PRODUCT-SPECIFIC DATA REQUIREMENTS FOR DCPA MANUFACTURING-USE PRODUCTS (cont'd)

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1/ Test Substance: MP = Manufacturing-Use Product.

2/ Not applicable. Although product chemistry data may have been submitted in the past, the Agency has determined that these data must be resubmitted for each pesticide. New requirements have been introduced and previously submitted data must be updated. Therefore, bibliographic citations for the old data are not applicable.

3/ The chemical name and nominal concentration of each impurity for which a certified limit is required must be submitted. In addition, the chemical name, nominal concentration, Chemical Abstracts Service (CAS) Registry Number, and purpose of the active ingredient and each intentionally added inert must be provided. For the active ingredient, the following must also be provided: the product name, trade name, and common name; the molecular structural, and empirical formulas; the molecular weight or weight range; and any experimental or internally assigned company code numbers.

4/ Timeframes for submitting data required in the Agency's June, 1987 Data Call-in Notice for analytical chemistry data on halogenated dibenzo-p-dioxins or dibenzofurans in DCPA are specified in that Notice.

5/ Complete information must be provided regarding the nature of the process (batch or continuous), the relative amounts of beginning materials and the order in which they are added, the chemical equations for each intended reaction, equipment used to produce each intermediate and the final product, reaction conditions, the duration of each step of the process, purification procedures, and quality control measures. In addition, the name and address of the manufacturer, producer, or supplier of each beginning material must be provided, along with information regarding the properties of each beginning material used to manufacture each product. In order to assess the potential for contamination with halogenated dibenzo-p-dioxins or dibenzofurans, the description of the manufacturing process must also include the range of temperature conditions, pressure, and pH at each reaction step. Refer to the data requirements set forth in the Agency's June, 1987 Data Call-in Notice for analytical chemistry data on halogenated dibenzo-p-dioxins or dibenzofurans in DCPA.

6/ A detailed discussion of all impurities that are or may be present at $\geq$ 0.1%, based on knowledge of the beginning materials, chemical reactions (intended and side) in the manufacturing process, and any contamination during and after production must be submitted. This discussion must also address the possible formation of halogenated dibenzo-p-dioxins or dibenzofurans in DCPA, as specified in the Agency's June, 1987 Data Call-in Notice.

7/ Five or more representative samples must be analyzed for the amount of active ingredient and each impurity for which a certified limit is required. Complete validation data (accuracy, precision) must be submitted for each analytical method used.

TABLE B

PRODUCT-SPECIFIC DATA REQUIREMENTS FOR DCPA MANUFACTURING-USE PRODUCTS (cont'd)

Footnotes (cont'd):

8/ Upper and lower limits for the active ingredient and each intentionally added inert, and upper limits for each impurity present at ≥ 0.1% (w/w) and each "toxicologically significant" impurity present at < 0.1% (w/w) must be provided, certified, and validated by sample analysis using analytical procedures for which accuracy and precision data have been provided. Limits for impurities not associated with the active ingredient need be provided only if they are considered to be of toxicological significance, regardless of the concentration at which they are present. The Agency's Data Call-in Notice of June, 1987 for analytical chemistry data on halogenated dibenzo-p-dioxins or dibenzofurans in DCPA requires certification of limits of any halogenated dibenzo-p-dioxin or dibenzofuran detected in the product. Certifications must be submitted on EPA Form 8570 (Rev. 2-85).

9/ Analytical methods must be provided to determine each toxicologically significant impurity and intentionally added inert for which certified limits are required. Each method must be accompanied by validation studies indicating its accuracy and precision. These methods must be suitable for enforcement of certified limits. The Agency's June, 1987 Data Call-in Notice for analytical chemistry data on halogenated dibenzo-p-dioxins and dibenzofurans in DCPA requires submission of an analytical method that meets the specifications given in that Notice.

10 Physicochemical characteristics (color, physical state, odor, specific gravity, pH, oxidizing or reducing action, flammability, explodability, storage stability, viscosity, miscibility, and corrosion characteristics) as required in 40 CFR 158.120 and more fully described in the Pesticide Assessment Guidelines, Subdivision D, must be submitted.

11/ Required if the test substance is dispersible with water.

12/ Required if the product contains an oxidizing or reducing agent.

13/ Required if the product contains combustible liquids.

14/ Required if the product is potentially explosive.

15/ Required if the product is a liquid.

16/ Required if the product is a liquid and is to be diluted with petroleum solvents.

TABLE B

PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING DCPA

Data Requirement	Test Substance[1]/	Use Pattern[2]/	Does EPA Have Data?	Bibliographic Citation	Must Additional Data be Submitted?	Time Fram fo Submissio
§158.135 Toxicology						
ACUTE TESTING						
81-1 - Acute Oral Toxicity - Rat	MP	A,B,H	No		Yes	9 Months
81-2 - Acute Dermal Toxicity - Rabbit	MP	A,B,H	No		Yes	9 Months
81-3 - Acute Inhalation Toxicity - Rat	MP	A,B,H	No		Yes	9 Months
81-4 - Primary Eye Irritation - Rabbit	MP	A,B,H	No		Yes	9 Months
81-5 - Primary Dermal Irritation - Rabbit	MP	A,B,H	No		Yes	9 Months
81-6 - Dermal Sensitization - Guinea Pig	MP	A,B,H	No		Yes	9 Months

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[1]/ Composition: MP = Manufacturing Use Product

[2]/ Use Patterns are coded as follows: A = Terrestrial, Food Crop; B = Terrestrial, Nonfood crop; C = Aquatic, Food Crop; D = Aquatic, Nonfood Crop; E = Greenhouse, Food Crop; F = Greenhouse, Nonfood crop; G = Forestry; H = Domestic, outdoor; I = Indoor.

APPENDIX II

LABELING APPENDICES

SUMMARY-1

LABEL CONTENTS

40 CFR 162.10 requires that certain specific labeling statements appear at certain locations on the label. This is referred to as format labeling. Specific label items listed below are keyed to the table at the end of this Appendix.

Item 1. PRODUCT NAME - The name, brand or trademark is required to be located on the front panel, preferably centered in the upper part of the panel. The name of a product will not be accepted if it is false or misleading.

Item 2. COMPANY NAME AND ADDRESS - The name and address of the registrant or distributor is required on the label. The name and address should preferably be located at the bottom of the front panel or at the end of the label text.

Item 3. NET CONTENTS - A net contents statement is required on all labels or on the container of the pesticide. The preferred location is the bottom of the front panel immediately above the company name and address, or at the end of the label text. The net contents must be expressed in the largest suitable unit, e.g., "1 pound 10 ounces" rather than "26 ounces." In addition to English units, net contents may be expressed in metric units. [40 CFR 162.10(d)]

Item 4. EPA REGISTRATION NUMBER - The registration number assigned to the pesticide product must appear on the label, preceded by the phrase "EPA Registration No.," or "EPA Reg. No." The registration number must be set in type of a size and style similar to other print on that part of the label on which it appears and must run parallel to it. The registration number and the required identifying phrase must not appear in such a manner as to suggest or imply recommendation or endorsement of the product by the Agency. [40 CFR 162.10(e)]

Item 5. EPA ESTABLISHMENT NUMBER - The EPA establishment number, preceded by the phrase "EPA Est." is the final establishment at which the product was produced, and may appear in any suitable location on the label or immediate container. It must also appear on the wrapper or outside container of the package if the EPA establishment number on the immediate container cannot be clearly read through such wrapper or container. [40 CFR 162.10(f)]

Item 6A. INGREDIENTS STATEMENT - An ingredients statement is required on the front panel. The ingredients statement must contain the name and percentage by weight of each active ingredient and the total percentage by weight of all inert ingredients. The preferred location is immediately below the product name. The ingredients statement must run parallel with, and be clearly distinguished from, other text on the panel. It must not be placed in the body of other text. [40 CFR 162.10(g)]

Item 6B. POUNDS PER GALLON STATEMENT - For liquid agricultural formulations, the pounds per gallon of active ingredient must be indicated on the label.

Item 7. FRONT LABEL PRECAUTIONARY STATEMENTS - Front panel precautionary statements must be grouped together, preferably within a block outline. The table below shows the minimum type size requirements for various size labels.

Size of Label on Front Panel in Square Inches	Signal Word Minimum Type Size All Capitals	"Keep Out of Reach of Children" Minimum Type Size
5 and under	6 point	6 point
above 5 to 10	10 point	6 point
above 10 to 15	12 point	8 point
above 15 to 30	14 point	10 point
over 30	18 point	12 point

Item 7A. CHILD HAZARD WARNING STATEMENT - The statement "Keep Out of Reach of Children" must be located on the front panel above the signal word except where contact with children during distribution or use is unlikely. [40 CFR 162.10(h)(1)(ii)]

Item 7B. SIGNAL WORD - The signal word (DANGER, WARNING, or CAUTION) is required on the front panel immediately below the child hazard warning statement. [40 CFR 162.10 (h)(1)(i)]

Item 7C. SKULL & CROSSBONES AND WORD "POISON" - On products assigned a toxicity Category I on the basis of oral, dermal, or inhalation toxicity, the word "Poison" shall appear on the label in red on a background of distinctly contrasting color and the skull and crossbones shall appear in immediate proximity to the word POISON. [40 CFR 162.10(h)(1)(i)]

Item 7D. STATEMENT OF PRACTICAL TREATMENT - A statement of practical treatment (first aid or other) shall appear on the label of pesticide products in toxicity Categories I, II, and III. [40 CFR 162.10(h)(1)(iii)]

Item 7E. REFERRAL STATEMENT - The statement "See Side (or Back) Panel for Additional Precautionary Statements" is required on the front panel for all products, unless all required precautionary statements appear on the front panel. [40 CFR 162.10(h)(1)(iii)]

Item 8. SIDE/BACK PANEL PRECAUTIONARY LABELING - The precautionary statements listed below must appear together on the label under the heading "PRECAUTIONARY STATEMENTS." The preferred location is at the top of the side or back panel preceding the directions for use, and it is preferred that these statements be surrounded by a block outline. Each of the three hazard warning statements must be headed by the appropriate hazard title. [40 CFR 162.10(h)(2)].

Item 8A. HAZARD TO HUMANS AND DOMESTIC ANIMALS - Where a hazard exists to humans or domestic animals, precautionary statements are required indicating the particular hazard, the route(s) of exposure and the precautions to be taken to avoid accident, injury or damage. [40 CFR 162.10(h)(2)(i)]

Item 8B. ENVIRONMENTAL HAZARD - Where a hazard exists to non-target organisms excluding humans and domestic animals, precautionary statements are required stating the nature of the hazard and the appropriate precautions to avoid potential accident, injury, or damage. [40 CFR 162.10(h)(2)(ii)]

Item 8C. PHYSICAL OR CHEMICAL HAZARD - FLAMMABILITY Precautionary statements relating to flammability of a product are required to appear on the label if it meets the criteria in the PHYS/CHEM Labeling Appendix. The requirement is based on the results of the flashpoint determinations and flame extension tests required to be submitted for all products. These statements are to be located in the side/back panel precautionary statements section, preceded by the heading "Physical/Chemical Hazards." Note that no signal word is used in conjunction with the flammability statements.

Item 9A. RESTRICTED USE CLASSIFICATION - FIFRA sec. 3(d) requires that all pesticide formulations/uses be classified for either general or restricted use. Products classified for restricted use may be limited to use by certified applicators or persons under their direct supervision (or may be subject to other restrictions that may be imposed by regulation).

In the Registration Standard, the Agency has (1) indicated certain formulations/uses are to be restricted (Section IV indicates why the product has been classified for restricted use); or (2) reserved any classification decision until appropriate data are submitted.

The Regulatory Position and Rationale states whether products containing this active ingredient are classified for restricted use. If they are restricted the draft label(s) submitted to the Agency as part of your application must reflect this determination (see below).

If you do not believe that your product should be classified for restricted use, you must submit any information and rationale with your application for reregistration. During the Agency's review of your application, your proposed classification determination will be evaluated in accordance with the provisions of 40 CFR 162.11(c). You will be notified of the Agency's classification decision.

SUMMARY-4

Classification Labeling Requirements

If your product has been classified for restricted use, the following label requirements apply:

1. All uses restricted.

a. The statement "Restricted Use Pesticide" must appear at the top of the front panel of the label. The statement must be set in type of the same minimum size as required for human hazard signal word (see table in 40 CFR 162.10(h)(1)(iv)

b. Directly below this statement on the front panel, a summary statement of the terms of restriction must appear (including the reasons for restriction if specified in Section I). If use is restricted to certified applicators, the following statement is required: "For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's Certification."

2. Some but not all uses restricted. If the Regulatory Position and Rationale states that some uses are classified for restricted use, and some are unclassified, several courses of action are available:

a. You may label the product for Restricted use. If you do so, you may include on the label uses that are unrestricted, but you may not distinguish them on the label as being unrestricted.

b. You may delete all restricted uses from your label and submit draft labeling bearing only unrestricted uses.

c. You may "split" your registration, i.e., register two separate products with identical formulations, one bearing only unrestricted uses, and the other bearing restricted uses. To do so, submit two applications for reregistration, each containing all forms and necessary labels. Both applications should be submitted simultaneously. Note that the products will be assigned separate registration numbers.

Item 9B. MISUSE STATEMENT - All products must bear the misuse statement, "It is a violation of Federal law to use this product in a manner inconsistent with its labeling." This statement appears at the beginning of the directions for use, directly beneath the heading of that section.

Item 10A. REENTRY STATEMENT - If a reentry interval has been established by the Agency, it must be included on the label. Additional worker protection statements may be required in accordance with PR Notice 83-2, March 29, 1983.

Item 10B. STORAGE AND DISPOSAL BLOCK - All labels are required to bear storage and disposal statements. These statements are developed for specific containers, sizes, and chemical content. These instructions must be grouped and appear under the heading "Storage and Disposal" in the directions for use. This heading must be set in the same type sizes as required for the child hazard warning. Refer to Appendix II, STOR, PEST/DIS, and CONT/DIS to determine the storage and disposal instructions appropriate for your products.

Item 10C. DIRECTIONS FOR USE - Directions for use must be stated in terms which can be easily read and understood by the average person likely to use or to supervise the use of the pesticide. When followed, directions must be adequate to protect the public from fraud and from personal injury and to prevent unreasonable adverse effects on the environment. [40 CFR 162.10]

COLLATERAL LABELING

Bulletins, leaflets, circulars, brochures, data sheets, flyers, or other written or graphic printed matter which is referred to on the label or which is to accompany the product are termed collateral labeling. Such labeling may not bear claims or representations that differ in substance from those accepted in connection with registration of the product. It should be made part of the response to this notice and submitted for review.

SUMMARY-6

LABELING REQUIREMENTS OF THE FIFRA, AS AMENDED

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
1	Product name	All products	Front panel	Center front panel	
2	Company name and address	All products	None	Bottom front panel or end of label text	If registrant is not the producer, must be qualified by "Packed for . . .," "Distributed by. . .," etc.
3	Net contents	All products	None	Bottom front panel or end of label text	May be in metric units in addition to U.S. units
4	EPA Reg. No.	All products	None	Front panel	Must be in similar type size and run parallel to other type.
5	EPA Est. No.	All products	None	Front panel, immediately before or following Reg. No.	May appear on the container instead of the label.
6A	Ingredients statement	All products	Front panel	Immediately following product name	Text must run parallel with other text on the panel.
6B	Pounds/gallon statement	Liquid products where dosage given as lbs. ai/unit area	Front panel	Directly below the main ingredients statement	
7	Front panel precautionary statements	All products	Front panel		All front panel precautionary statements must be grouped together, preferably blocked.
7A	Keep Out of Reach of Children (Child hazard warning)	All products	Front panel	Above signal word	Note type size requirements.
7B	Signal word	All products	Front panel	Immediately below child hazard warning	Note type size requirements.

SUMMARY-7

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
7C	Skull & crossbones and word POISON (in red)	All products which are Category I based on oral, dermal, or inhalation toxicity	Front panel	Both in close proximity to signal word	
7D	Statement of Practical Treatment or First Aid	All products in Categories I, II, and III	Category I: Front panel unless referral statement is used. Others: Grouped with side panel precautionary statements.	Front panel for all.	
7E	Referral statement	All products where precautionary labeling appears on other than front panel.	Front panel		
8	Side/back panel precautionary statements	All products	None	Top or side of back panel preceding directions for use	Must be grouped under the headings in 8A, 8B, and 8C; preferably blocked.
8A	Hazards to humans and domestic animals	All products in Categories I, II, and III	None	Same as above	Must be preceded by appropriate signal word.
8B	Environmental hazards	All products	None	Same as above	Environmental hazards include bee caution where applicable.

SUMMARY-8

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
8C	Physical or chemical hazards	All pressurized products, others with flash points under 150°F	None	Same as above	Refer to Appendix II guide PHYS/CHEM
9A	Restricted block	All restricted products	Top center of front panel	Preferably blocked	Includes a statement of the terms of restriction. The words "RESTRICTED USE PESTICIDE" must be same type size as signal word.
9B	Misuse statement	All products	Immediately following heading of directions for use		Required statement is: "It is a violation of Federal law to use this product in a manner inconsistent with its labeling."
10A	Reentry statement	PR Notice 83-2 or as determined by the Agency	In the directions for use	Immediately after misuse statement	
10B	Storage and disposal block	All products	In the directions for use	Immediately before specific directions for use or at the end of directions for use	Must be set apart and clearly distinguishable from from other directions for use. Refer to Appendix II guides STOR, CONT/DIS, and PEST/DIS for further information and required statements.
10C	Directions for use	All products	None	None	May be in metric as well as U.S. units

APPENDIX III

USE INDEX APPENDICES

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DIMETHYL TETRACHLOROTEREPHTHALATE*

TYPE PESTICIDE: Herbicide

FORMULATIONS:
FI (50%, 90%)
G (1.15%, 1.25%, 1.27%, 1.5%, 1.72%, 2%, 2.28%, 2.3%, 2.31%, 2.41%, 2.5%, 2.87%, 2.9%, 3%, 3.28%, 3.47%, 3.85%, 4.16%, 4.4%, 4.5%, 4.6%, 4.8%, 4.87%, 4.95%, 5%, 5.5%, 5.7%, 5.75%, 6%, 6.14%, 6.3%, 6.86%, 6.9%, 7%, 10%, 24%)
WP (25%, 50%, 60%, 75%)
FlC (54.9%)
SC/L (6%)

GENERAL WARNINGS AND LIMITATIONS: A selective herbicide used to control preemergent broadleaf weeds and grasses in agricultural crops, ornamentals, and turf grasses. This chemical is toxic to fish. Do not apply where runoff is likely. Do not apply when conditions such as high salt concentrations, seedling disease, cold weather, deep planting, excessive moisture, or drought may weaken crops normally tolerant to this product. Do not use on peat or muck soils. For areas under tillage, apply to soil surface within 2 to 3 days following cultivation to prevent further weed germination. Injury may result to the following crops, if replanting is required due to early crop failure: onions, seeded melons, potatoes, tomatoes, eggplants, or peppers. Replanting of any agricultural crop (in treated soil) other than those included in this report within 8 months of application may result in injury to that crop. All crops listed in this report may be planted following a harvest of a treated crop. Weed control up to 4 months may be expected following proper application. Do not soil incorporate deeper than 2 inches. Applications may be made by spray, fertilizer spreader, or shaker can.
Environmental Hazard Statements: Do not apply directly to water or wetlands (swamps, bogs, marshes, and potholes). Do not contaminate water by cleaning of equipment or disposal of wastes. For granular formulations, collect and incorporate granules spilled on soil surface.
Wear goggles or face shield, long-sleeved shirt and long pants when mixing, loading and applying this product. Wash thoroughly with soap and water after handling. Remove contaminated clothing and separately launder clothing before reuse. For granular or wettable powder formulations, a dust mask or similar protection against particle inhalation must be worn when mixing, loading and applying this product. For commercial greenhouse uses, only the applicator is permitted to be in the greenhouse during application of DCPA. Greenhouse vents must be open during application and remain open for at least 1 hour after application. For homeowner or household uses, wear goggles or face shield when handling. Remove contaminated clothing and separately launder clothing before reuse. Wash thoroughly with soap and water after handling. For agricultural uses, do not enter treated areas for 24 hours after application unless wearing long-sleeved shirt, long pants, and a dust mask or similar protection against particle inhalation.
Agricultural Crop Tolerances (other than those listed in the text):

Rutabagas	2.0 ppm

*dacthal
DCPA

DIMETHYL TETRACHLOROTEREPHTHALATE

TIME REQUIRED FOR CONTROL: Not located.

PHYTOTOXICITY TO TARGET WEEDS: Not located.

PHYTOTOXICITY TO CROPS: Not located.

MODE OF ACTION: Inhibits cell division and root tip growth.

BROADLEAF WEEDS CONTROLLED:

Broadleaf weeds
Carpetweed
Chickweed
Clover
Common chickweed
Dodder
Florida pusley
Lambsquarters
Nodding spurge (a)
Palmer amaranth
Prostrate spurge
Purslane
Redroot pigweed (a)
Redstem filaree
Sesbania
Slender speedwell
Spiny amaranth
Spotted spurge (a)
Witchweed
Wright groundcherry (a)

(a) Use the higher dosage.

GRASSES AND OTHER MONOCOTS CONTROLLED:

Annual bluegrass (a)
Annual grasses
Barnyardgrass (a)
Browntop panicum (a)
Crabgrass
Fall panicum
Goosegrass (a)
Green foxtail
Johnsongrass (from seed) (a)
Large crabgrass
Lovegrass
Sandbur (a)
Smooth crabgrass
Stinkgrass
Texas panicum
Witchgrass
Yellow foxtail

(a) Use the higher dosage.

TERRESTRIAL FOOD CROP

(Agricultural Crops)

General Warnings and Limitations: If weeds have emerged, crops should be cultivated or weeded prior to application.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Beans (dry, field, snap) **Mung Beans** **Southern Peas** (black-eyed beans)	2.0 ppm (beans, snap, succulent) 2.0 ppm (beans, mung, dry) 2.0 ppm (beans, field, dry) 2.0 ppm (peas, southern, black-eyed) Do not graze treated areas or feed plant parts to livestock.
5-11 (2%, 2.28%, 2.41%, 2.5%, 4.16%, 5% G) (25%, 75% WP)	Preemergence. Broadcast or band application. Soil treatment. Apply preplant incorporated at seeding or at transplanting. For the wettable powder formulation, apply in 20 gallons of water per acre by ground or in 10 gallons of water per acre by air.
Broccoli **Brussels Sprouts** **Cabbage** **Cauliflower**	1.0 ppm Do not graze treated areas or feed plant parts to livestock.
5-11 (2%, 2.28%, 2.5%, 4.16%, 5%, 6% G) (25%, 50%, 75% WP)	Preemergence. Broadcast or band application. Soil treatment. Apply preplant incorporated at planting or at transplanting. For the wettable powder formations, apply in 20 gallons of water per acre by ground or in 10 gallons of water per acre by air.
(broccoli) [SLN] 5-11 (75% WP)	SLN - Use limited to CA. Preemergence. Broadcast or band application. Soil treatment. Apply preplant incorporated at seeding. Apply in 20 gallons of water per acre by ground or in 10 gallons of water per acre by air.

DIMETHYL TETRACHLOROTEREPHTHALATE

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Broccoli (Chinese) (tight heading varieties) Chinese Cabbage (tight heading varieties)	1.0 ppm Do not graze treated areas or feed plant parts to livestock. General Information: Do not enter treated area until spray residue has dried.
[SLN] 4.5-10.5 (75% WP)	SLN - Use limited to CA. Preemergence. Broadcast. For control of annual grasses and broadleaf weeds. Apply in a minimum 20 gallons of water per acre by ground or in a minimum 10 gallons of water per acre by air at planting. Make 1 application per crop per growing season.
Brussels Sprouts	See Broccoli cluster.
Cabbage	See Broccoli cluster.
Cantaloupe	1.0 ppm
Cucumber	
Honeydew Melon	
Squash	
Watermelon	
5-11 (2%, 2.28%, 2.41%, 2.5%, 3.85%, 4.16%, 5% G) (75% WP)	Preemergence. Broadcast or band application. Soil treatment. Apply 4 to 6 weeks after seeding or at transplanting. For the wettable powder formulation, apply in 20 gallons of water per acre by ground or in 10 gallons of water per acre by air. Do not incorporate into the soil.
5-11 (5%, 6% G) (75% WP)	Postemergence to seeded planting. Broadcast or band application. Soil treatment. Apply when plants have 4 to 5 true leaves. For the wettable powder formulation, apply in 20 gallons of water per acre by ground or in 10 gallons of water per acre by air. Do not incorporate into the soil.
[SLN] 5-6 (75% WP)	SLN - Use limited to NC. Preplant incorporation. Broadcast. Apply in 25 to 50 gallons of water per acre.
Cauliflower	See Broccoli cluster.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Chinese Cabbage (tight heading varieties)	See Broccoli (Chinese) cluster.
Collards	2.0 ppm (collards, kale, turnips) 5.0 ppm (mustard greens, turnip (greens))
Kale	
Mustard Greens	
Turnip (greens)	
Turnip (roots)	
5-11 (2%, 2.28%, 2.41%, 2.5%, 4.16%, 5%, 6% G) (75% WP)	Preemergence. Broadcast or band application. Soil treatment. Apply preplant incorporated at seeding or at transplanting. For the wettable powder formulation, apply in 20 gallons of water per acre by ground or in 10 gallons of water per acre by air.
Corn, Field	0.05 ppm (corn, grain (inc. field and pop) sweet (K+CWHR))
Corn, Sweet	0.4 ppm (corn, field, forage) 0.4 ppm (corn, field, fodder) 0.4 ppm (corn, pop, forage) 0.4 ppm (corn, pop, fodder) 0.4 ppm (corn, sweet, forage) 0.4 ppm (corn, sweet, fodder)
8-11 (75% WP)	Preemergence. Broadcast or band application. Soil treatment. Apply at planting. Do not incorporate into the soil.
[SLN] 6-11 (75% WP)	SLN - Use limited to NC and SC. Postemergence. Directed spray. For control of witchweed. Apply to corn interplanted to beans (field, snap), southern peas, or soybeans. Apply to corn 18 inches or taller in 20 to 30 gallons of water per acre. Use drop nozzles between rows.

DIMETHYL TETRACHLOROTEREPHTHALATE

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Cotton	0.2 ppm (cotton, seed) 45 day preharvest interval.
5-11 (75% WP)	Preemergence. Broadcast. Apply preplant incorporated at seeding or at layby in 20 gallons of water per acre by ground or in 10 gallons of water per acre by air. Use the lower dosages for layby application and the higher dosage for irrigated areas. Do not apply after peak bloom.
Cress, Upland	5.0 ppm
[SLN] 5-11 (75% WP)	SLN - Use limited to NC and TN. Preemergence. Broadcast. Soil treatment. Apply at seeding. May be preplant incorporated.
Cucumber	See Cantaloupe cluster.
Eggplant Peppers	1.0 ppm (eggplant) 2.0 ppm (peppers, pimentos)
5-11 (2%, 2.28%, 2.41%, 2.5%, 3.85%, 4.16%, 5%, 6% G) (50%, 75% WP)	Postemergence. Broadcast or band application. Soil treatment. Apply at transplanting or at layby. Layby applications may be made up to 4 to 6 weeks after transplanting. For wettable powder formulations, apply in 20 gallons of water per acre by ground or in 10 gallons of water by air. Do not apply to seeded plants until plants are 4 to 6 inches tall.
Garlic Onions	1.0 ppm Do not graze treated areas or feed plant parts to livestock. General Information: In sandy loam soils a maximum preemergence rate of 8 pounds active ingredient per acre is recommended.
5-11 (2%, 2.28%, 2.41%, 2.5%, 4.16%, 5%, 6% G) (25%, 50%, 75% WP)	Preemergence. Broadcast or band application. Soil treatment. Apply at seeding or at transplanting. For wettable powder formulations, apply in 20 gallons of water per acre by ground or in 10 gallons of water per acre by air. Do not preplant incorporate. OR Layby application. Apply up to 14 weeks after planting or transplanting.
Honeydew Melon	See Cantaloupe cluster.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Horseradish	2.0 ppm
8-11 (5% G)	Preemergence. Broadcast or band application. Soil treatment. Apply at planting. Do not preplant incorporate.
Kale	See Collards cluster.
Leeks	1.0 ppm (onions) General Information: In sandy loam soils a maximum preemergence rate of 8 pounds active ingredient per acre is recommended.
[SLN] 5-11 (75% WP)	SLN - Use limited to CA. Preemergence. Broadcast or band application. Soil treatment. Apply at seeding or at transplanting. Apply in 20 gallons of water per acre by ground or in 10 gallons of water per acre by air. Do not preplant incorporate. OR Layby application. Apply up to 14 weeks after planting or transplanting.
Lettuce (head)	2.0 ppm
Lettuce (leaf)	
5-11 (2%, 2.28%, 2.41%, 2.5%, 3.85%, 4.16%, 5%, 6% G) (75% WP)	Preemergence. Broadcast or band application. Soil treatment. For lettuce (head), make 1 application no later than 3 weeks after emergence. OR Postemergence. Broadcast or band application. Soil treatment. For lettuce (leaf), make 1 application no later than 3 weeks after emergence.
Mung Beans	See Beans (dry, field, snap) cluster.
Mustard Greens	See Collards cluster.
Onions	See Garlic cluster.
Peppers	See Eggplant cluster.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Potato (whole or cut pieces)	2.0 ppm Do not graze treated areas or feed plant parts to livestock. General Information: Initial sprinkler irrigation should not exceed 1 inch. In the Pacific northwest, under dry conditions, apply prior to the initial sprinkler irrigation. When using furrow irrigation in the Pacific northwest, shallow incorporate (less than 0.5 inch deep) while potato sprouts are well below the soil surface. The 5 percent granular formulation is not recommended for use in CA.
5-11 (2%, 2.28%, 2.41%, 2.5%, 4.16%, 5% G) (50%, 75% WP)	Preemergence. Broadcast or band application. Soil treatment. Apply at planting, at drag-off or at layby. Layby application can be made up to 9 weeks after planting. For the wettable powder formulations, apply in 20 gallons of water per acre by ground or in 10 gallons of water per acre by air.
Radish (grown for seed)	2.0 ppm (radish, roots) 15.0 ppm (radish, tops) Do not graze in treated areas or feed plant refuse to livestock. Do not allow seed screenings to be used for feed.
[SLN] 8-11 (75% WP)	SLN - Use limited to WA. Preplant incorporated. Incorporate 3 to 4 inches using a rotary tiller or double disk.
Southern Peas (black-eyed beans)	See Beans (dry, field, snap) cluster.
Soybeans	2.0 ppm Do not graze treated areas or feed plant refuse, vines or threshings to livestock.
2 (10% G)	Preplant incorporation. Band treatment. Shallow incorporate 1 to 2 inches deep.
5-11 (4.16%, 5% G) (75% WP)	Preemergence. Broadcast or band application. Soil treatment. Apply at seeding in 20 gallons of water per acre by ground or in 10 gallons of water per acre by air.
[MAI] 4-8 (24% G) (60% WP)	Preemergence. Broadcast or band application. Soil treatment. Apply after planting. Do not plant to other crops within 4 months of treatment. Formulated with linuron.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Squash	See Cantaloupe cluster.
Strawberry	2.0 ppm
5-11 (2%, 2.28%, 2.41%, 2.5%, 3.85%, 4.16%, 5%, 6% G) (25%, 50%, 75% WP)	Preemergence. Broadcast or band application. Soil treatment. Apply preplant incorporated or at planting. For the wettable powder formulations, apply in 20 gallons of water per acre by ground or in 10 gallons of water per acre by air. OR Postemergence. Broadcast or band application. Soil treatment. Apply to established plantings in the fall or early spring. Do not apply after first bloom.
Sweet Potatoes (yams)	2.0 ppm
5-11 (2%, 2.28%, 2.5%, 3.85%, 4.16%, 5% G) (25%, 50%, 75% WP)	Postemergence. Broadcast or band application. Soil treatment. Apply at transplanting. For the wettable powder formulations, apply in 20 gallons of water per acre by ground or in 10 gallons of water per acre by air. OR Layby application. May be made up to 6 weeks after transplanting.
Tomato	1.0 ppm
5-11 (2%, 2.28%, 2.41%, 2.5%, 3.85%, 4.16%, 5%, 6% G) (25%, 75% WP)	Postemergence. Broadcast. Soil treatment. Apply 4 to 6 weeks after transplanting or when seeded plants are 4 to 6 inches tall. For the wettable powder formulation, apply in 20 gallons of water per acre by ground or in 10 gallons of water per acre by air.
Turnip (greens)	See Collards cluster.
Turnip (roots)	See Collards cluster.
Watermelon	See Cantaloupe cluster.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
TERRESTRIAL NONFOOD CROP	
(Ornamental Plants and Forest Trees)	
Abelia Arborvitae Ash Austrian Pine Azalea Barberry Birch Blue Spruce Border Forsythia Boston Ivy Boxwood California Privet Camellia Chestnut Cotoneaster Cottonwood Creeping Juniper Cuphea Cypress Deutzia Dogwood Dwarf Forsythia Elaeagnus Elm English Ivy Euonymus Fir Flowering Crabapple Forsythia Ground-Hemlock Gum Hawthorn Heath Holly Honeysuckle Hybrid Tea Roses Hydrangea Japanese Andromeda Japanese Barberry Japanese Privet Japanese Yew Juniper Lantana Ligustrum Lilac Loblolly Pine	Do not graze or feed forage or plant refuse from treated areas to livestock or poultry. General Information: Do not apply to soils to be planted with seed the same season. For the wettable powder formulations, apply in 8 to 10 gallons of water per 5,000 square feet.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Abelia cluster (continued) Locust Magnolia Maple Mentor Barberry Mock-Orange Mountain-Laurel Multiflora Rose Oak Pachysandra Paxistima Pine Pittosporum Podocarpus Ponderosa Pine Poplar Redbud Red Pine Rhododendron Rose Russian Olive Scotch Pine Shore Pine Spirea Spruce Sycamore Tree Peony Tuliptree Varigated Privet Viburnum Walnut Weigela White Spruce Willow Wormwood Yellow Pine Yew	
1.0-1.3 lb a.i./ 5,000 sq.ft (1.27%, 2%, 2.28%, 2.3%, 2.41%, 2.5%, 3.47%, 3.85%, 4.16%, 5%, 6%, 6.14%, 6.9% G) (25%, 50%, 75% WP)	Postemergence. Broadcast or band application. Soil treatment. Apply to new beds at transplanting and to established plantings in the fall or early spring. Apply one-half of the product in 1 direction and the other half at right angles to the first application.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Abelia cluster (continued)	
0.9-1.3 lb a.i./ 5,000 sq.ft (2.41%, 2.5%, 4.6%, 5%, 6.86% G) (50%, 75% WP) (54.9% FlC)	Postemergence. Broadcast or band application. Soil treatment. For newly set out plants, apply at lining-out in the late fall or early spring. For established plantings, apply after cultivation to remove existing weeds. A late summer application will control fall-germinating weeds.
[MAI] 1.3 lb a.i./5,000 sq.ft (1.27% G)	Postemergence. Broadcast. Soil treatment. Formulated with carbaryl.

African Violet
Ageratum
Ajuga
Alyssum
Aster
Baby's Breath
Bellflower
Bleeding Heart
Bloodleaf
Blue Bedder Salvia
Bugloss
Candle Larkspur
Candytuft
Cape Marigold
Chrysanthemum
Cinquefoil
Coleus
Columbine
Coneflower
Coral Bells
Coreopsis
Cosmos
Creeping Thyme
Dahlias
Daisies
Evening Primrose
Fernleaf Yarrow
Feverfew
Forget-Me-Not
Four-O'Clock
Foxglove
Gaillardia
Geranium
Gladiolus
Gold-Dust
Golden Marguerite

General Information: Do not apply to soils to be planted with seed the same season. Do not apply to bugleweed, button pink, carnations, geum, germander, mesembryanthemum, pansies, phlox, sweet william, or telanthera.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
African Violet cluster (continued)	
Goldentuft Iris Larkspur Lavender Cotton Lilies Lupines Marigold Morningglory Mourning Bride Mourning Pink Nasturtium Orpine Peonies Petunias Purple Coneflower Rose Moss Salvia Scabiosa Scarlet Sage Snapdragon Spiderwort Stonecrop Strawflower Sundrops Sunflower Sweet Pea Torch Lily Verbena Violets Wallflower Yarrow Zinnia	
1.0-1.3 lb a.i./ 5,000 sq.ft (1.27%, 2%, 2.28%, 2.3%, 2.41%, 2.5%, 3.47%, 3.85%, 4.16%, 4.6%, 4.8%, 5%, 6%, 6.14%, 6.86%, 6.9% G) (25%, 50%, 75% WP)	Postemergence. Broadcast or band application. Soil treatment. Apply to new beds at transplanting and to established plants in the fall or early spring. Apply onehalf of the product in 1 direction and the other half at right angles to the first application. For the wettable powder formulations, apply in 8 to 10 gallons of water per 5,000 square feet.
[MAI] 1.3 lb a.i./5,000 sq.ft (1.27% G)	Postemergence. Broadcast. Soil treatment. Formulated with carbaryl.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Athletic Field/Turf	
1.2 lb a.i./5,000 sq.ft (6.9% G)	Broadcast. Apply in the early spring before weed germination.
Bermudagrass (from sod) Zoysia Grass (from sod)	General Information: These grasses are derived from sod only, to be used as sprigs or plugs.
1.3 lb a.i./5,000 sq.ft (2.5% G)	Broadcast. Apply at sod laying before the first watering.
English Ivy (ground cover) Ivy (ground cover) Pachysandra (ground cover)	
1.0-1.2 lb a.i./ 5,000 sq.ft (2.5%, 4.6%, 5% G)	Postemergence. Broadcast. Soil treatment. Apply in the late fall or early spring before weed germination. Do not disturb soil after treatment. An additional treatment may be made at the same rate after 3 months.
Golf Fairways/Golf Greens	General Information: If spring seeding is necessary, wait 60 days after application to seed. Do not use on bentgrass golf greens.
1.2 lb a.i./5,000 sq.ft (2%, 2.87%, 6.9% G)	Broadcast. Apply in the early spring before weed germination. Apply half the product in 1 direction and the other half at right angles to the first application. A second application may be made in the late summer or early fall.

DIMETHYL TETRACHLOROTEREPHTHALATE

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Ornamental Lawns	
	General Information: This site includes the following lawn grasses: alta fescue, bahiagrass (pensocola), carpetgrass, centipedegrass, fescue, Kentucky bluegrass (merion), mixed blue-fescue, ryegrass, and St. Augustinegrass (bitter blue), (floratine). Use the lower dosages on sandy soils and the higher dosages on heavy soils. Do not apply to Cohancey or Toronto bents, or to dichondra. Do not apply to wet grass. Do not mow lawns for 24 hours after treatment. When reseeding is necessary, a delay of 60 days after treatment is recommended. On newly spring-seeded lawns, do not apply until after the third mowing. Do not rake or disturb soil after application. Apply before temperatures reach 70 F (21.1 C) to 75 F (23.9 C) for 3 consecutive days. Apply on calm days to avoid wind drift.
0.9-1.4 lb a.i./ 5,000 sq.ft (1.15%, 1.25%, 1.27%, 1.5%, 1.72%, 2%, 2.28%, 2.3%, 2.31%, 2.5%, 2.87%, 2.9%, 3.28%, 3.47%, 3.85%, 4.16%, 4.4%, 4.6%, 4.87%, 5%, 5.75%, 6.14%, 6.3%, 6.86%, 6.9%, 7% G) (25%, 50%, 75% WP) (54.9% FlC) (6% SC/L)	Broadcast. Apply to newly seeded and established lawns in early spring. Apply half the product in 1 direction and the other half at right angles to the first application. A second application at half the regular dosage may be made in late summer or early fall. May be applied in 5 to 20 gallons of water per 5,000 square feet.
0.69 lb a.i./ 5,000 sq.ft. (2.3% G)	Broadcast. For control of crabgrass. Apply in late winter or early spring. Apply the second application at right angles to the first application.
0.9-1.3 lb a.i./ 5,000 sq.ft (3%, 4.16% G) (50%, 75% WP) (54.9% FlC)	Broadcast. For control of crabgrass on newly seeded lawns. Apply in April, May, or June in at least 5 to 10 gallons of water per 5,000 square feet to new grass seedlings 1 to 2 inches tall.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Ornamental Lawns (continued)	
1.4-1.8 lb a.i./ 5,000 sq.ft (3%, 4.5%, 5% G) (50%, 75% WP) (54.9% FlC) (6% SC/L)	Broadcast. For control of annual bluegrass. In the northern United States apply in mid-August or September, in the southern United States earlier treatments are required. May be applied following an early spring treatment for crabgrass. May be applied in 20 gallons of water per 5,000 square feet.
0.9-1.7 lb a.i./ 5,000 sq.ft (5.5% G)	Broadcast. For control of large and smooth crabgrass. Apply January 1 through April 30. Do not apply to newly seeded lawns.
1.1-1.4 lb a.i./ 5,000 sq.ft (50% WP) (54.9% FlC)	Broadcast. For control of emerged slender speedwell. Apply in at least 5 to 10 gallons of water per 5,000 square feet in the spring or when temperatures are between 65 F (18.3 C) and 90 F (32.2 C). A second application may be made 14 days after the first application.
0.9-1.4 lb a.i./ 5,000 sq.ft (75% WP) (54.9% FlC)	Broadcast. For control of prostrate and spotted spurge. Apply in mid-April and repeat application in 6 to 8 weeks. Apply in at least 5 to 10 gallons of water per 5,000 square feet.
1 lb a.i./5,000 sq.ft (5% G)	Spot treatment. Apply in the late fall or early spring before annual weeds germinate. Reseeding of established lawns should not be done for at least 6 months after treatment.
1.2-2.0 lb a.i./ 5,000 sq.ft (4.8%, 4.95%, 6.86% G) (75% WP) (6% SC/L)	For Professional Use Only. Broadcast. Apply in the spring before weed seeds germinate. Delay application to newly seeded lawns until greening of sprouted lawn grasses appear. At least 0.5 inch of irrigation or sprinkler water is needed within a week of application. May be applied in 10 to 20 gallons of water per 5,000 square feet.
[SLN] 1.8 lb a.i./5,000 sq.ft (3% G)	SLN - Use limited to OR and WA. Broadcast. For control of emerged slender speedwell. Apply in at least 5 to 10 gallons of water per 5,000 square feet in the spring or when temperatures are between 65 F (18.3 C) and 90 F (32.2 C). A second application may be made 14 days after the first application.

Site, Dosage and Formulation (lb a.i./A)	Tolerance, Use, Limitations
Ornamental Lawns (continued)	
[MAI] 1.3-1.9 lb a.i./ 5,000 sq.ft (1.27% G)	Broadcast. Apply to new and established lawns in late winter or early spring and again in late summer or early fall. Formulated with carbaryl.
[MAI] 1.2 lb a.i./5,000 sq.ft (2.87%, 5.7% G)	Broadcast. Apply half the product in 1 direction and the other half at right angles to the first application. Repeat application in 4 weeks. Water lawn thoroughly 1 day before application. Do not water or mow lawn for 24 hours after application. Do not apply when air temperatures are 85 F (29.4 C) or above. Do not use on St. Augustinegrass, Tifgreen and other fine-bladed bermudagrasses, bentgrasses, cutgrasses, or dichondras. Formulated with one or a combination of: DSMA; 2,4-D, N-oleyl-1,3-propylenediamine salt; or 2-(2-methyl-4-chlorophenoxy)propionic acid, dimethylamine salt.
Stocks	
	General Information: Do not enter treated area until spray residue has dried.
[SLN] 10.5 (75% WP)	SLN - Use limited to Santa Barbara County, CA. Preemergence. Broadcast. For control of pigweed. Apply in 20 gallons of water per acre after planting but before crop emerges. Make 1 application per crop per growing season.
AERIAL AND TANK MIX APPLICATIONS	
Aerial Application	
--	Refer to TERRESTRIAL FOOD CROP (Agricultural Crops) Beans (dry, field, snap); Broccoli; Broccoli (Chinese) (tight heading varieties); Brussels Sprouts; Cabbage; Cantaloupe; Cauliflower; Chinese Cabbage (tight heading varieties); Collards; Cotton; Cress, Upland; Cucumber; Eggplant; Garlic; Honeydew Melon; Kale; Leeks; Mung Beans; Mustard Greens; Onions; Peppers; Potato (whole or cut pieces); Southern Peas (black-eyed beans); Soybeans; Squash; Strawberry; Sweet Potatoes (yams); Tomato; Turnip (greens); Turnip (roots); Watermelon

Site, Dosage and Formulation (lb a.i./A)	**Tolerance, Use, Limitations**

Aerial Application (continued)

TERRESTRIAL NONFOOD CROP
(Ornamental Plants and Forest Trees)
Athletic Field/Turf

DIMETHYL TETRACHLOROTEREPHTHALATE

Listing of Registered Pesticide Products by Formulation

50% formulation intermediate
dimethyl tetrachloroterephthalate (078701)
050534-00025

90% formulation intermediate
dimethyl tetrachloroterephthalate (078701)
050534-00113

1.15% granular
dimethyl tetrachloroterephthalate (078701)
005298-00008 011684-00002

1.25% granular
dimethyl tetrachloroterephthalate (078701)
001990-00147 008952-00001

1.27% granular
dimethyl tetrachloroterephthalate (078701)
042057-00084

dimethyl tetrachloroterephthalate (078701) plus carbaryl (056801)
015099-00001

1.5% granular
dimethyl tetrachloroterephthalate (078701)
005298-00007

1.72% granular
dimethyl tetrachloroterephthalate (078701)
058649-00001

2% granular
dimethyl tetrachloroterephthalate (078701)
007401-00024 007401-00076 007401-00140 007401-00385
010107-00004

2.28% granular
dimethyl tetrachloroterephthalate (0787001)
007764-00003 033108-00010 033108-00012 033108-00013

2.3% granular
dimethyl tetrachloroterephthalate (078701)
000072-00508 000557-00655 000557-01691 000557-01782
000961-00205

2.31% granular
dimethyl tetrachloroterephthalate (078701)
003442-00702 007001-00270

2.41% granular
dimethyl tetrachloroterephthalate (078701)
007401-00027

Listing of Registered Pesticide Products by Formulation (continued)

2.5% granular

dimethyl tetrachloroterephthalate (078701)
000728-00069 000746-00109 001381-00116 001386-00477
002217-00617 002393-00176 003442-00760 003772-00028
008814-00001 010107-00086 033955-00474 050534-00017

2.87% granular

dimethyl tetrachloroterephthalate (078701)
00849-00014 009198-00001

dimethyl tetrachloroterephthalate (078701), disodium methanearsonate (013802), 2,4-dichlorophenoxyacetic acid, N-oleyl-1,3-propylenediamine salt (030029) plus 2-(2-methyl-4-chlorophenoxy)propionic acid, dimethylamine salt (031519)
003234-00029

2.9% granular

dimethyl tetrachloroterephthalate (078701)
000228-00157 000961-00243 008378-00009

3% granular

dimethyl tetrachloroterephthalate (078701)
000802-00503

(000820-00503) OR800075 WA800066

3.28% granular

dimethyl tetrachloroterephthalate (078701)
003234-00028 024232-00004

3.47% granular

dimethyl tetrachloroterephthalate (078701)
042057-00083

3.85% granular

dimethyl tetrachloroterephthalate (078701)
000407-00408 000557-01758 000557-01822 004067-00004
004185-00319 004185-00374

4.16% granular

dimethyl tetrachloroterephthalate (078701)
000468-00009 000468-00019 000468-00021 000471-00014
023486-00014 023486-00029 023486-00032

4.4% granular

dimethyl tetrachloroterephthalate (078701)
000538-00109

4.5% granular

dimethyl tetrachloroterephthalate (078701)
001159-00165

Listing of Registered Pesticide Products by Formulation (continued)

4.6% granular

dimethyl tetrachloroterephthalate (078701)

000557-01733 000961-00225 002290-00033 010404-00049
032802-00006

4.8% granular

dimethyl tetrachloroterephthalate (078701)

000572-00193

4.87% granular

dimethyl tetrachloroterephthalate (078701)

000961-00310

4.95% granular

dimethyl tetrachloroterephthalate (078701)

008378-00013

5% granular

dimethyl tetrachloroterephthalate (078701)

000004-00300 000016-00042 000072-00478 000239-02456
000407-00284 000407-00317 000407-00416 000471-00023
000538-00128 000572-00147 000572-00282 000655-00628
000802-00441 000829-00165 000961-00273 000961-00278
001159-00154 001386-00610 001990-00362 002124-00759
002125-00049 002939-00013 003442-00808 003442-00810
005298-00016 005348-00012 005815-00035 005887-00097
007001-00275 007001-00321 008590-00260 008590-00377
008590-00482 010107-00082 010404-00048 010051-00031
033108-00004 033108-00007 042057-00103 050534-00003

(   ) CA800178

dimethyl tetrachloroterephthalate (078701), dimethyl phosphate of alpha-methyl-benzyl 3-hydroxy-cis-crotonate (058801) plus xylene (086802)

045180-00016*

*jacket currently unavailable for review

5.5% granular

dimethyl tetrachloroterephthalate (078701)

009198-00024

5.7% granular

dimethyl tetrachloroterephthalate (078701), 2,4-dichlorophenoxyacetic acid (030001) plus 2-(2-methyl-4-chlorophenoxy)propionic acid (031501)

000538-00099

5.75% granular

dimethyl tetrachloroterephthalate (078701)

000538-00106 002491-00139

Listing of Registered Pesticide Products by Formulation (continued)

6% granular
dimethyl tetrachloroterephthalate (078701)
005535-00102

6.14% granular
dimethyl tetrachloroterephthalate (078701)
008590-00247

6.3% granular
dimethyl tetrachloroterephthalate (078701)
000538-00087   000538-00107

6.86% granular
dimethyltetrachloroterephthalate (078701)
000572-00237   008590-00578   033625-00001

6.9% granular
dimethyl tetrachloroterephthalate (078701)
000264-00249   000557-01971

7% granular
dimethyl tetrachloroterephthalate (078701)
003442-00559

10% granular
dimethyl tetrachloroterephthalate (078701)
000228-00099

24% granular
dimethyl tetrachloroterephthalate (078701) plus linuron (035506)
050534-00030

25% wettable powder
dimethyl tetrachloroterephthalate (078701)
000228-00222

50% wettable powder
dimethyl tetrachloroterephthalate (078701)
000004-00297   023486-00048

60% wettable powder
dimethyl tetrachloroterephthalate (078701) plus linuron (035506)
050534-00026

75% wettable powder
dimethyl tetrachloroterephthalate (078701)
000004-00296   000407-00338   001381-00078   002749-00232
007765-00017   033955-00509   050534-00001   050534-00020

(   )   TN810022

Listing of Registered Pesticide Products by Formulation (continued)

75% wettable powder (continued)

(050534-00001) CA800178 CA860043 NC780025 NC810008 NC810030 SC780015 TN870009 WA820004

(050534-00020) IN780010 NV810006

54.9% flowable concentrate
dimethyl tetrachloroterephthalate (078701)
050534-00010

6% soluble concentrate/liquid
dimethyl tetrachloroterephthalate (078701)
001769-00246

State Label Registrations

AZ Reg. No.
010583-09397

CA Reg. No.
011093-07368 011149-04670 011204-04104

CO Reg. No.
000677-03977

ID Reg. No.
000677-03978

NM Reg. No.
000677-03980 010583-03256

NV Reg. No.
000677-03979

OK Reg. No.
000677-03981

OR Reg. No.
000677-03982

TX Reg. No.
010583-08650

UT Reg. No.
000677-03983

WA Reg. No.
000677-03984

DIMETHYL TETRACHLOROTEREPHTHALATE

Appendix A-1

Listing of Active Ingredient(s) Found in Combination with the Report Chemical

Chemical Code	Common Name (source)	EPA Acceptable Common/Chemical Name
056801	carbaryl	--
058801	crotoxphos (ISO)	dimethyl phosphate of alpha-methyl-benzyl 3-hydroxy-cis-crotonate.
030001	2,4-D	2,4-dichlorophenoxyacetic acid
030029	2,4-D, N-oleyl-1,3-propylenediamine salt	2,4-dichlorophenoxyacetic acid, N-oleyl-1,3-propylenediamine salt
013802	DSMA	disodium methanearsonate
035506	linuron	--
031501	mecoprop (ISO)	2-(2-methyl-4-chloro-phenoxy)-propionic acid
031519	2-(2-methyl-4-chlorophenoxy) propionic acid, dimethylamine salt	--
086802	xylene	--

-- Use Common Name

APPENDIX IV

BIBLIOGRAPHY APPENDICES

BIBGUIDE-1

GUIDE TO USE OF THIS BIBLIOGRAPHY

1. CONTENT OF BIBLIOGRAPHY. This bibliography contains citations of all studies considered relevant by EPA in arriving at the positions and conclusions stated elsewhere in the Standard. Primary sources for studies in this bibliography have been the body of data submitted to EPA and its predecessor agencies in support of past regulatory decisions. Selections from other sources including the published literature, in those instances where they have been considered, will be included.

2. UNITS OF ENTRY. The unit of entry in this bibliography is called a "study." In the case of published materials, this corresponds closely to an article. In the case of unpublished materials submitted to the Agency, the Agency has sought to identify documents at a level parallel to the published article from within the typically larger volumes in which they were submitted. The resulting "studies" generally have a distinct title (or at least a single subject), can stand alone for purposes of review, and can be described with a conventional bibliographic citation. The Agency has attempted also to unite basic documents and commentaries upon them, treating them as a single study.

3. IDENTIFICATION OF ENTRIES. The entries in this bibliography are sorted numerically by "Master Record Identifier," or MRID, number. This number is unique to the citation, and should be used at any time specific reference is required. It is not related to the six-digit "Accession Number" which has been used to identify volumes of submitted studies; see paragraph 4(d)(4) below for a further explanation. In a few cases, entries added to the bibliography late in the review may be preceded by a nine-character temporary identifier. These entries are listed after all MRID entries. This temporary identifier number is also to be used whenever specific reference is needed.

4. FORM OF ENTRY. In addition to the Master Record Identifier (MRID), each entry consists of a citation containing standard elements followed, in the case of material submitted to EPA, by a description of the earliest known submission. Bibliographic conventions used reflect the standards of the American National Standards Institute (ANSI), expanded to provide for certain special needs.

a. Author. Whenever the Agency could confidently identify one, the Agency has chosen to show a personal author. When no individual was identified, the Agency has shown an identifiable laboratory or testing facility as author. As a last resort, the Agency has shown the first submitter as author.

b. Document Date. When the date appears as four digits with no question marks, the Agency took it directly from the document. When a four-digit date is followed by a question mark, the bibliographer deduced the date from evidence in the document. When the date appears as (19??), the Agency was unable to determine or estimate the date of the document.

c. Title. In some cases, it has been necessary for Agency bibliographers to create or enhance a document title. Any such editorial insertions are contained between square brackets.

d. Trailing Parentheses. For studies submitted to the Agency in the past, the trailing parentheses include (in addition to any self-explanatory text) the following elements describing the earliest known submission:

  (1) Submission Date. The date of the earliest known submission appears immediately following the word "received."

  (2) Administrative Number. The next element, immediately following the word "under," is the registration number, experimental use permit number, petition number, or other administrative number associated with the earliest known submission.

  (3) Submitter. The third element is the submitter, following the phrase "submitted by." When authorship is defaulted to the submitter, this element is omitted.

  (4) Volume Identification (Accession Numbers). The final element in the trailing parentheses identifies the EPA accession number of the volume in which the original submission of the study appears. The six-digit accession number follows the symbol "CDL," standing for "Company Data Library." This accession number is in turn followed by an alphabetic suffix which shows the relative position of the study within the volume. For example, within accession number 123456, the first study would be 123456-A; the second, 123456-B; the 26th, 123456-Z; and the 27th, 123456-AA.

OFFICE OF PESTICIDE PROGRAMS
REGISTRATION STANDARD BIBLIOGRAPHY
Citations Considered to be Part of the Data Base Supporting Registrations Under the DCPA Standard

MRID	CITATION
00010026	Manning, P.B.; Olney, C.E.; Quinn, J.G.; et al. (1963) Direct gas chromatographic method for herbicide residues suitable for electron-capture detection. Pesticide Research Bulletin 3(2):6-8. (Also in unpublished submission received Sep 1963 under 464-367; submitted by Dow Chemical U.S.A., Midland, Mich.; CDL: 101380-A)
00017975	Burnside, O.C. (1977) Abstract for the 1977 North Central Weed Control Conference Research Report: Selective Control of Weeds in Corn: Test No. 11488. (Unpublished study received Oct 20, 1978 under 100-583; prepared by Univ. of Nebraska, Agricultural Experiment Station, submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL:235353-BK)
00018299	Stallard, D.E. (1970) Residue Analyses and Procedure. (Unpublished study received Nov 12, 1970 under unknown admin. no.; submitted by Diamond Shamrock Agricultural Chemicals, Cleveland, Ohio; CDL:123816-E)
00018842	Atkins, E.L., Jr.; Anderson, L.D.; Greywood, E.A. (1969) Effect of Pesticides on Apiculture: Project No. 1499; Research Report CF-7501. (Unpublished study received May 8, 1971 under 1F1174; prepared by Univ. of California--Riverside, Dept. of Entomology, submitted by Ciba Agrochemical Co., Summit, N.J.; CDL:090973-B)
00033087	Manning, P.B.; Kerr, T.W.; Olney, C.E.; et al. (1964) Residue Study. (Unpublished study including published data, received Jan 14, 1965 under 100-471; prepared in cooperation with Univ. of Rhode Island, Agricultural Experiment Station and Gaspro, Ltd., submitted by Ciba-Geigy Corp., Greensboro, N.C.; CDL: 000459-F)
00038919	Gutenmann, W.H.; Lisk, D.J. (1966) Metabolism of Daconil and Dacthal pesticides in lactating cows. Journal of Dairy Science 49 (10):1272-1276. (Also in unpublished submission received Feb 25, 1976 under 6F1749; submitted by Diamond Shamrock Agricultural Chemicals, Cleveland, Ohio; CDL:096457-K)
00057629	Reno, F.E.; Stanovick, R. (1974) Final Report: Meat and Milk Residue Study in Dairy Cows: Project No. 200-223. (Unpublished study received on unknown date under 3F1417; prepared by Environmental Sciences Corp., submitted by Diamond Shamrock Agricultural Chemicals, Cleveland, Ohio; CDL:093787-C)

OFFICE OF PESTICIDE PROGRAMS
REGISTRATION STANDARD BIBLIOGRAPHY
Citations Considered to be Part of the Data Base Supporting Registrations Under the DCPA Standard

MRID	CITATION
00058377	Diamond Shamrock Agricultural Chemicals (1973) Residue Studies of Dacthal in Various Crops. (Compilation; unpublished study received Jun 29, 1973 under 3F1417; CDL:093787-D)
00058378	Szalkowski, M.B. (1973) Evaluation of the Potential for Dacthal and Its Metabolites to Accumulate in Chicken Eggs and Tissues during 30 Days of Dietary Exposure. (Unpublished study received Jun 29, 1973 under 3F1417; submitted by Diamond Shamrock Agricultural Chemicals, Cleveland, Ohio; CDL:093787-E)
00072099	Diamond Shamrock Corporation (1968) Hexachlorobenzene Residue Data. (Compilation; unpublished study received Dec 10, 1968 under 9F0780; CDL:091340-C)
00083584	Hazleton, L.W.; Dieterich, W.H. (1963) Final Report: Two-year Dietary Feeding—Dogs. (Unpublished study received Dec 15, 1963 under PP0411; prepared by Hazleton Laboratories, Inc., submitted by Diamond Shamrock Agricultural Chemicals, Cleveland, Ohio; CDL:090443-T)
00090259	Hazleton Laboratories (1963) Residue Data for Cabbage and Various Other Crops Treated With Dacthal. (Compilation; unpublished study received Dec 18, 1963 under PP0411; CDL:090445-A)
00100775	Kouri, R.; Parmar, A.; Kuzava, J.; et al. (1977) Activity of DTX-77-0004 in the Dominant Lethal Assay in Rodents for Mutagenicity: Project No. T1077. Final rept. (Unpublished study received May 12, 1982 under 677-290; prepared by Microbiological Assoc., submitted by Diamond Shamrock Agricultural Chemicals, Cleveland, OH; CDL:247439-C)
00114631	Diamond Shamrock Agricultural Chemicals (1973) Residue Data: Dacthal. (Compilation; unpublished study received May 10, 1973 under 677-166; CDL:004224-B)
00114642	Diamond Alkali Co. (1967) Results of Tests on the Amount of Residue Remaining: Dacthal. (Compilation; unpublished study received Jan 9, 1968 under 8F0640; CDL:091112-B)
00114643	Diamond Alkali Co. (1964) Study: Dacthal Residue on Selected Crops. (Compilation; unpublished study received on unknown date under PP0411; CDL:092698-A)

OFFICE OF PESTICIDE PROGRAMS
REGISTRATION STANDARD BIBLIOGRAPHY
Citations Considered to be Part of the Data Base Supporting
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MRID CITATION

00114644 Diamond Alkali Co. (1967) Residues of Dacthal in Cottonseed. (Compilation; unpublished study received Dec 28, 1967 under 8F0640; CDL:092934-A)

00114648 Szalkowski, M. (1975) The Effect of Light, Temperature, and pH on the Hydrolysis of Dacthal. (Unpublished study received Mar 23, 1976 under 3F1417; submitted by Diamond Shamrock Chemcial Co., Cleveland, OH; CDL:095189-D)

00114654 Interregional Research Project No. 4 (1975) Results of Tests on the Amount of Residues Remaing, Including a Description of the Analytical Methods Used: Dacthal. (Compilation; unpublished study received Nov 21, 1975 under 6E1711; CDL:095363-A)

00114677 Limpel, L. (1962) Letter sent to Diamond Alkali Co. dated Sep 13, 1962; Radioautographic studies of HCB and Dacthal applied to cotton plants. (Unpublished study received Nov 21, 1962 under unknown admin. no.; prepared by Boyce Thompson Institute for Plant Research, Inc., submitted by Diamond Shamrock Agricultural Chemicals, Cleveland, OH; CDL:119453-A)

00114678 Diamond Shamrock Agricultural Chemicals (1962) Summary of Status of Residue Data: Dacthal. (Compilation; unpublished study received Nov 21, 1962 under 677-139; CDL:119455-A)

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OFFICE OF PESTICIDE PROGRAMS
REGISTRATION STANDARD BIBLIOGRAPHY
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APPENDIX V

FORMS APPENDICES

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OMB Approval No. 2070-0057
Expires 11/30/89

FIFRA SECTION 3(C)(2)(B) SUMMARY SHEET	**EPA REGISTRATION NO.**
PRODUCT NAME	
APPLICANT'S NAME	**DATE GUIDANCE DOCUMENT ISSUED**

With respect to the requirement to submit "generic" data imposed by the FIFRA section 3(C)(2)(B) notice contained in the referenced Guidance Document, I am responding in the following manner:

☐ 1. I will submit data in a timely manner to satisfy the following requirements. If the test procedures I will use deviate from (or are not specified in) the Registration Guidelines or the Protocols contained in the Reports of Expert Groups to the Chemicals Group, OECD Chemicals Testing Programme, I enclose the protocols that I will use:

☐ 2. I have entered into an agreement with one or more other registrants under FIFRA section 3(C)(2)(B)(ii) to satisfy the following data requirements. The tests, and any required protocols, will be submitted to EPA by:

NAME OF OTHER REGISTRANT

☐ 3. I enclose a completed "Certification of Attempt to Enter Into an Agreement with Other Registrants for Development of Data" with respect to the following data requirements:

☐ 4. I request that you amend my registration by deleting the following uses (this option is not available to applicants for new products):

☐ 5. I request voluntary cancellation of the registration of this product. (This option is not available to applicants for new products.)

REGISTRANT'S AUTHORIZED REPRESENTATIVE	**SIGNATURE**	**DATE**

EPA Form 8580-1 (10-82)

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CERTIFICATION OF ATTEMPT TO ENTER INTO AN AGREEMENT WITH OTHER REGISTRANTS FOR DEVELOPMENT OF DATA

(To qualify, certify ALL four items)

1. I am duly authorized to represent the following firm(s) who are subject to the requirements of a Notice under FIFRA Section 3(c)(2)(B) contained in a Guidance Document to submit data concerning the active ingredient:

GUIDANCE DOCUMENT DATE

ACTIVE INGREDIENT

NAME OF FIRM	EPA COMPANY NUMBER

(This firm or group of firms is referred to below as "my firm".)

2. My firm is willing to develop and submit the data as required by that Notice, if necessary. However, my firm would prefer to enter into an agreement with one or more other registrants to develop jointly, or to share in the cost of developing, the following required items or data:

3. My firm has offered in writing to enter into such an agreement. Copies of the offers are attached. That offer was irrevocable and included an offer to be bound by an arbitration decision under FIFRA Section 3(c)(2)(B)(iii) if final agreement on all terms could not be reached otherwise. This offer was made to the following firm(s) on the following date(s):

NAME OF FIRM	DATE OF OFFER

However, none of those firm(s) accepted my offer.

4. My firm requests that EPA not suspend the registration(s) of my firm's product(s), if any of the firms named in paragraph (3) above have agreed to submit the data listed in paragraph (2) above in accordance with the Notice. I understand EPA will promptly inform me whether my firm must submit data to avoid suspension of its registration(s) under FIFRA Section 3(c)(2)(B). (This statement does not apply to applicants for new products.) I give EPA permission to disclose this statement upon request.

TYPED NAME	SIGNATURE	DATE

EPA Form 8580-6 (10-82)

OMB Approval No. 2070-0057
Expires 11/30/89

PRODUCT SPECIFIC DATA REPORT

EPA Reg. No.____________________ Date __________________________

Registration Standard for ____

Registration Guideline No.	Name of Test	Test not required for my product listed above (check below)	I am complying with data requirements by		(For EPA Use Only) MRID Numbers Assigned
			Citing MRID Number or EPA Accession Number	Submitting Data (Attached)	
§158.120 PRODUCT CHEMISTRY					
61-1	Identity of ingredients				
61-2	Statement of composition				
61-3	Discussion of formation of ingredients				
62-1	Preliminary analysis				
62-2	Certification of limits				
62-3	Analytical methods for enforcement limits				
63-2	Color				
63-3	Physical state				
63-4	Odor				
63-5	Melting point				
63-6	Boiling point				
63-7	Density, bulk-density, or specific gravity				
63-8	Solubility				
63-9	Vapor pressure				
63-10	Dissociation constant				
63-11	Octanol/water partition coefficient				
63-12	pH				

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Registration Guideline No.	Name of Test	Test not required for my product listed above (check below)	I am complying with data requirements by Citing MRID Number or EPA Accession Number	I am complying with data requirements by Submitting Data (Attached)	(For EPA Use Only) MRID Numbers Assigned
63-13	Stability				
63-14	Oxidizing/reducing reaction				
63-15	Flammability				
63-16	Explodability				
63-17	Storage stability				
63-18	Viscosity				
63-19	Miscibility				
63-20	Corrosion characteristics				
63-21	Dielectric breakdown voltage				
§158.135 TOXICOLOGY					
81-1	Acute oral toxicity, rat				
81-2	Acute dermal toxicity, rabbit				
81-3	Acute inhalation, toxicity, rat				
81-4	Primary eye irritation, rabbit				
81-5	Primary dermal irritation				
81-6	Dermal sensitization				

OMB Approval No. 2070-0057
Expiration Date 11/30/89

GENERIC DATA EXEMPTION STATEMENT

EPA Product Registration Number: ______________

Registrant's Name and Address: ______________________________________

____

As an authorized representative of the registrant of the product identified above, I certify that:

(1) I have read and am familiar with the terms of the Notice from EPA dated __________ concerning a requirement for submission of generic data on the active ingredient ____________ named under FIFRA Section 3(c)(2)(B).

(2) My firm requests that EPA not suspend the registration of our product, despite our lack of intent to submit the generic data in question, on the grounds that the product contains the active ingredient solely as the result of the incorporation into the product of another product which contains that active ingredient, which is registered under FIFRA Section 3, and which is purchased by us from another producer.

(3) An accurate Confidental Statement of Formula(CSF) for the above-identified product is attached to this statement. That formula statement indicates, by company name, registration number, and product name, the source of the subject active ingredient in my firm's product, or

The CSF dated ________ on file with EPA is complete, current and accurate and contains the information requested on the current CSF Form No. 8570-4. The registered source(s) of the above named active ingredient in my product(s) is/are ____________________ and their registration number(s) is/are ____________ .

(4) My firm will apply for an amendment to the registration prior to changing the source of the active ingredient in our product to one that is not registered and purchased.

(5) I understand, and agree on behalf of my firm, that if at any time any portion of this Statement is no longer true, or if my firm fails to comply with the undertakings made in this Statement, my firm's product's registration may be suspended under FIFRA Section 3(c)(2)(B).

(6) I further understand that if my firm is granted a generic data exemption for the product, my firm relies on the efforts of other persons to provide the Agency with the required generic data. If the registrant(s) who have committed to generate and submit the required data fail to take appropriate steps to meet requirements or are no longer in compliance with this Notice's data requirements, the Agency will consider that both they and my firm are not in compliance and will normally initiate proceedings to suspend the registrations of my firm's product(s) and their product(s), unless my firm commits to submit and submits the required data in the specified time frame. I understand that, in such cases, the Agency generally will not grant a time extension for submitting the data.

Registrant's authorized representative: ______________________________
(Signature)

Dated: ________________ ______________________________
(Typed)

EPA Form 8570-27